

EFFECTS OF EMOTIONAL ROLE-PLAYING IN
MODIFYING STUDY HABITS AND ATTITUDE

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

An introduction and background of the study, the statement of the problem, the purpose of the study, the research hypotheses, the definitions of the terms used, and a summary have been encompassed in this chapter.

I. INTRODUCTION

There have been a number of experimental studies that indicated that role-playing appeared to change a subject's attitudes and behavior. In a study by Janis and King it was predicted and confirmed that verbalizers, as opposed to those who merely read arguments to themselves, swayed more towards the communications opinion.¹ Their study was based on their personal observations of what often happened to debaters who had to take a position that they initially disagreed with, and also it

¹Irving L. Janis and Bert T. King, "The Influence of Role-playing on Opinion Change," Journal of Abnormal and Social Psychology, 1954, 49, pp. 211-218.

was based on an account by Myers who described improvement in morale attitudes produced by participation in an Army public-speaking course.² Both of these studies concluded that attitude changes occurred when a role was played.

In a later study by Janis and Mann it was confirmed that emotional role-playing had a significantly greater effect in modifying smoking habits and attitudes toward cigarette smoking than merely listening to a tape recording of a role-playing session.³ Their experiment was based on their observations that when people stopped smoking after direct encounters with cancer victims, it was partly because of empathic reactions involving the realization that if it can happen to others it can happen to themselves. Furthermore, they theorized and confirmed that a marked change in attitude and behavior was likely to occur if the smoker could no longer relegate the feared consequences to the category of remote or irrelevant dangers.

²G. C. Myers, "Control of Conduct by Suggestion," Journal of Applied Psychology, 1921, 5, pp. 26-31.

³Irving L. Janis and Leon Mann, "Effectiveness of Emotional Role-playing in Modifying Smoking Habits and Attitudes," Journal of Experimental Research in Personality, 1965, 1 (2), pp. 84-90.

II. THE PROBLEM

It was with the above mentioned observations, theories, and studies in mind that the examiner assumed the technique that role-playing could be used in a way to provide an empathic contact experience with a student who had been academically dismissed from college.

Statement of the problem. In what way did emotional role-playing modify student attitudes and behavior toward studying?

Statement of the hypothesis. When exposed to the same communication, students who were required to role-play empathically the role of one who was academically dismissed from college were more anxious after the treatment session, and were more positively influenced in their attitudes and behavior toward studying and passing with better grades than students who were passively exposed.

The null form of the hypothesis was that there was no significant differences after the treatment session in anxiety, attitudes, and behavior toward studying and passing with better grades between students who were passively exposed and those who were required to role-play someone who was academically dismissed from college.

Purposes of the study. This study was designed to determine if empathic role-playing modified attitudes and behavior of students more positively in favor of studying than did being a passive listener. As was illustrated in the Janis and Mann study, when people stopped smoking after direct encounters with cancer victims a marked change

in attitude and behavior was likely to occur if an individual was no longer able to relegate the feared consequences to the category of remote or irrelevant dangers.⁴ In a similar manner, the purpose of this study was to determine if the empathic reactions of student who played the role of a student who was academically dismissed brought about a greater attitude and behavior change in the direction of studying than was evident on the part of the students who were passively exposed to a situation and who could have repressed the feared consequences or relegated them to the category of remote or irrelevant dangers.

Significance of the study. Students are often the passive recipients of messages from parents, educators, and counselors who state that if they do not change their attitudes and study they will "flunk out." Often this sound advice is ignored. Empathic role-playing may be a potent technique that can be used to modify the attitudes and behavior of students in the desired direction.

III. DEFINITIONS OF TERMS USED

Role-playing. The terms role-playing, empathic role-playing, and emotional role-playing for use in this study were interchangeable. Role-playing was defined as reading aloud with feeling from a prepared script (see Appendix A) and placing oneself in the position of a

⁴Ibid.

student who had been academically dismissed from college. The term empathic, when used with role-playing, was defined as "the projection of one's own personality into that of another...or emotional identification with another."⁵

Not role-playing. This term was used interchangeably with the terms listeners and passive exposure in this study. Non role players were defined as listening to the role-player playing the role.

Attitude change. Attitude change toward study was defined as occurring if a significant difference was found between the mean scores of the experimental and control groups on the midterm examination.

Experimental and control groups. The experimental group consisted of the role-players, and the control group was the listeners. As an explanation of the grouping,

The assignment of subjects to groups must be made in such a way that the groups will be approximately equivalent at the start of the experiment. The experimenter next typically administers an experimental treatment to one of the groups. The experimental treatment is what he wishes to evaluate, and it is administered to the experimental group. The other group, called the control group, usually receives a normal or standard treatment.⁶

It was assumed that the experimental and control groups were equal in ability and prior motivation when they were equated in anxiety.

⁵The Southwestern Company, Webster New World Dictionary of the American Language (Nashville, Tennessee: The Southwestern Company, 1965), p. 246.

⁶F. J. McGuigan, Experimental Psychology: A Methodological Approach (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1960), pp. 4-5.

Treatment session. This was defined as the session in which the experimental group role-played and the control group listened. The treatment session was conducted one week following the prior measurement of anxiety.

Scale of anxiety. The measure of anxiety used in this study was one derived from the MMPI by Taylor (see Appendix B) which scored manifest anxiety on a scale from 0 to 50.⁷

Prior and post anxiety. Prior anxiety was the level of manifest anxiety before the treatment, and post anxiety was the level of manifest anxiety after the treatment, as measured by the Taylor Manifest Anxiety Scale.⁸

Study guide. The study guide (see Appendix C) was constructed directly from the midterm test for the purpose of guiding the subjects in their studying for the examination. It was distributed immediately after the treatment session.

Examination. This was the true-false, 85 item midterm test (see Appendix D). It was constructed directly from the material presented to the subjects in the course.

Right-answered scores. This was defined as the number of right answers earned on the examination.

⁷Janet A. Taylor, "A Personality Scale of Manifest Anxiety," The Journal of Abnormal and Social Psychology, 1953, 68, (2), pp. 61-66.

⁸Ibid.

Wrong-answered scores. This was defined as the number of wrong answers earned on the examination.

Final examination scores. For the purpose of this study, the final examination score was calculated by subtracting the number of wrong answers from the number of right answers.

Not-answered scores. The number of questions on the examination which were left unanswered.

IV. LIMITATIONS OF THE STUDY

This study was limited to determining if empathic role-playing by students significantly increased the level of their anxiety after the treatment session and more positively in the direction of studying than did passive exposure of students to the communication.

No generalizations to larger populations were made. For example, similar results might not have been obtained from a group of sophomores at a different academic institution.

In determining anxiety, attitude, and behavior change, this study was limited to determining change for a limited period of time and no attempt was made to measure long-term change.

V. SUMMARY

A number of studies were discussed in this chapter that indicated that role-playing appeared to change a subject's

attitudes and behavior. The statement of the problem was: In what way did emotional role-playing modify student attitudes and behavior toward studying? The hypothesis stated that role-playing raised anxiety and affected attitudes and behavior toward studying. The null form stated that there was no significant difference after treatment. The purpose of the study was to compare the effects on studying of role-playing as opposed to listening. The significance of the study was that role-playing may be a technique which can be used to modify study attitudes and behavior of student in the desired direction. The definitions of terms used in the study were contained in this chapter. The limitations of the study were restricted to the effects of role-playing and listening on students for a limited period of time. No generalizations were made to larger populations or to students at other institutions.

CHAPTER II

REVIEW OF THE LITERATURE AND RELATED RESEARCH

A review of the literature and research relative to role-playing and attitude and behavior change, and a summary have been encompassed in this chapter.

I. REVIEW OF ROLE-PLAYING, ATTITUDE AND BEHAVIOR CHANGE

The influence of role-playing on opinion change. Janis and King, investigating the influence of role-playing on opinion change, designed their experiment to investigate the effects of one type of demand that is frequently made upon a person when he is induced to play a social role, more specifically, the requirement that he overtly verbalize to others various opinions which might not correspond to his inner convictions.

Their prediction was that verbalizers, as opposed to those who merely read the arguments to themselves, would sway more towards

the communications opinion.¹ This was based on their personal observations of what often happened to debaters who had to take a position that they initially disagreed with, and also on an account by Myers who described the improvement in morale attitudes produced by participation in an Army public-speaking course.²

In order to test their basic hypothesis that when exposed to the same persuasive communications, people who are required to verbalize the contents to others will tend to be more influenced than those who are only passively exposed, Janis and King designed their experiment so that communication exposure was held constant and they compared the opinion changes of active participants and passive controls who were exposed to the same communications.

Prior to the treatments of the control and experimental groups, an initial questionnaire was administered and opinions analyzed concerning personal views as to how many commercial movie theaters would be open in three years, how much meat would be available during the year, and when a cure for the common cold would be found.

Opinion measures obtained at the end of the treatment sessions were compared with the before measures obtained about one month earlier. In the case of the first two communications, the active participants showed significantly more opinion change than the passive controls.

¹Irving L. Janis and Bert T. King, "The Influence of Role-Playing on Opinion Change," Journal of Abnormal and Social Psychology, 1954, 49, pp. 211-218.

²C. G. Myers, "Control of Conduct by Suggestion: An Experiment in Americanization," Journal of Applied Psychology, 1921, 5, pp. 26-31.

In the case of the third communication both groups showed approximately the same amount of opinion change, but active participation tended to increase the level of confidence of those whose opinion estimates were influenced by the communication.

Janis and King indicated that the main findings, together with the various methodological checks, supported the hypothesis that overt verbalization induced by role-playing tended to augment the effectiveness of a persuasive communication.³

Modification of emotionally-held attitudes through role-playing.

Culbertson, using psychodramatic experiences as a means of changing social attitudes, demonstrated that role-playing induced change in an emotionally-held attitude, and that the change induced by this method tended to generalize to other related attitudes. The subjects were given attitude measures and tested on authoritarianism two weeks before, and the same attitude measures seven to ten days after the role-playing experience. A control group was given the attitude measures and the test on authoritarianism at the same time as the other subjects but did not participate in the role-playing experience. In the role-playing session subjects, either as participants or observers, were concerned with the problem of determining the most effective theme for an educational program designed to minimize tensions accompanying the integration of new Negro families into the housing areas of a community. Each of the three roles of the psychodrama involved the

³Janis and King, loc. cit.

development of a different proposed theme, though all were favorable to integration of the Negroes.

The predictions of change in attitude of both participants and observers toward Negro integration in housing and in generalized attitude toward the Negro were significant. Role-players, to a significantly greater degree than observers, changed in their attitudes toward Negro integration in housing and in generalized attitude toward the Negro. In general there was a high degree of involvement in the drama in both positions of participant and observer. Lastly, the data clearly indicated, in exploring the relationship between the authoritarian subjects were less influenced by role-playing as a means of changing attitudes toward Negro integration in housing than were low authoritarian subjects.

In summary, the results of the Culbertson study indicated that role-playing experiences might change specific and generalized emotionally-held attitudes, that role position influenced involvement in the drama and brought about attitude change, and that personality factors limited the effectiveness of role playing as a force for attitude change.⁴

A review of experimental evaluations of role-playing. An article by Mann (1956) indicated that the most striking impression to

⁴Frances M. Culbertson, "Modification of an Emotionally Held Attitude through Role-playing," Journal of Abnormal and Social Psychology, 1957, 54, pp. 230-233.

be gained from his review of the experimental studies of role-playing was their scarcity. He stated that except for the few studies he reported, effort among practitioners of role-playing seemed to have been devoted to the exploitation of its various applications.

With reference to personality change, attitude change, and role-playing, Mann stated at that time there was as yet little supportive evidence. Mann pointed out that the studies which did exist suggested the possibility of such change and indicated a few relevant variables that might have been involved. He expressed the need for exploration of role-playing as a method for producing personality change. He ended his article by concluding that role-playing at that time had not yet been proven to produce personality change.⁵

King and Janis, investigating the conditions under which inner beliefs or opinions were affected when one was induced to become an active participant with respect to communicating a persuasive message, compared the effectiveness of improvised versus non-improvised role-playing in producing opinion changes. King and Janis designed their study to assess the importance of two factors that could have changed the effects of role-playing. The two factors were improvisation of one's own arguments in support of the assigned conclusion, and satisfaction with one's own speaking-performance.

⁵John H. Mann, "Experimental Evaluations of Role-Playing," Psychological Bulletin, 1956, 53, pp. 227-234.

Using three equivalent groups of subjects, each group was given the same persuasive message which stated that they would soon be drafted into the armed forces and would be required to serve a year longer than the current draftees. The passive control group read the script silently to themselves; another group read the script aloud; another group read the script silently to themselves and then gave an improvised talk.

The results of the study indicated that although the oral reading task, which involved no improvisation, evoked a markedly higher degree of satisfaction than the improvisation task, the improvisation role-playing condition was the only experimental variation that produced a significant increase in personal acceptance of the communication. The results indicated that the amount of opinion change produced through active participation was dependent upon the amount of improvisation during role-playing.⁶

In a later study by Zimbardo, the improvisation hypothesis was contradicted.⁷ Zimbardo stated in his study,

In the present study, as well as the one cited earlier by Greenbaum (1963), quality of improvisation bore no relation to attitude change, while Jonson and Stolorow (1962) demonstrated that attitude change was significantly less when subjects improvised than when they imitated the improvisation of another

⁶Bert T. King and Irving L. Janis, "Comparisons of the Effectiveness of Improvised Versus Non-improvised Role-playing in Producing Opinion Changes," Human Relations, 1956, 9, pp. 177-186.

⁷Philip G. Zimbardo, "The Effect of Effort and Improvisation on Self Persuasion Produced by Role-Playing," Journal of Experimental and Social Psychology, 1965, 1 (2), pp. 103-120.

person. Finally, Stanley and Klausmeirer's (1957) attempt to replicate the King and Janis finding also yielded negative conclusions, even after internal analyses according to age, sex, and subject's initial opinions. The failure of the present study to achieve the improvisation effect then is not unusual, but rather is in keeping with the results obtained by other researchers, and forces a reconsideration in some detail of the study by King and Janis.

In conclusion then, 'The improvisation hypothesis asserts that people tend to be especially impressed by their own persuasive efforts when they are stimulated to think up new arguments and appeals in order to do a good job of convincing others' (King and Jarvis, p. 178). The results of the present study cause us to re-evaluate such a statement and dictate that attention should be centered upon the role of 'persuasive effort' per se, as well as upon the intellectual stimulation aspect of invention of arguments. The need for systematic theoretical and empirical appraisal of the role of effort upon attitudes and other significant behaviors is certainly called for.

The relation between attitude and roles. Lieberman designed a study to determine the effects of changes in roles on the attitudes of role occupants. Observing that many social psychological studies had found relationships between people's attitude and their social roles, and that it had almost invariably been found that foremen were more pro-management than non-foreman, and that union stewards were more pro-union than non-stewards. Lieberman wanted to determine if people who had attitudes which were appropriate for a role tended to be selected for that role or if people who were placed in a role tended to take on attitudes which were appropriate for that role.

Lieberman proposed to study the relationships, to measure the operation of these determinants through data gathered at different points in time.

⁸Ibid., pp. 118-119.

The study was a natural field experiment in which questionnaires dealing with management and the union were administered to 2,354 rank-and-file workers in a medium-sized factory engaged in the production of home appliance equipment. Twenty-three of the workers were promoted to foreman and thirty-five were elected by their work groups as union stewards.

A year and three months after the initial questionnaires were given, the questionnaires were re-administered to two groups of workers who had changed roles and to two matched control groups of workers who had not changed roles. Role selection was measured by comparing the initial characteristics of workers who later changed roles with those of the rest of the worker population; role adaptation was measured by comparing the before and after attitudes of those who changed roles, using the control groups as base lines.

Little relationship was found to indicate that, on role selection, a worker's chances of becoming a foreman or steward depended on the extent to which his attitudes were congruent with these roles. There was no indication that workers who were selected as foreman tended initially to be pro-management or that workers who were selected as stewards tended to be initially pro-union.

There were, however, some major ways in which the experimental respondents did differ from the non-experimental respondents. These differences were in demographic variables, ability variables, and mobility variables. The experimental respondents also tended to be younger and to have a greater interest in securing high-status jobs.

The results on role-adaptation indicated that, although workers who were made foreman and workers who were made stewards did not appear to be initially selected on the basis of their attitudes toward management or toward the union, their attitudes did undergo systematic changes once they were placed in their new roles. The workers who were made foremen tended to become more pro-management, and the workers who were made stewards tended to become more pro-union. Further study indicated that foremen who were demoted tended to revert to the attitudes they had held when they were in the worker role, and that those who remained as foremen either maintained their changed attitudes or moved further in that direction.

Lieberman concluded that the results of his study gave strong support to the theory that the role a person occupied had an impact on his attitudes and value orientation.⁹

Elbing reported a study in which subjects assigned to a role compatible with their prior attitudes, reacted more favorably to a role-playing experience than subjects assigned to roles incompatible with their prior attitudes. Subjects who played a role compatible with their attitudes tended to move toward a position more extreme than their original stand. Those who played a role opposite to their original attitudes tended to move toward a more moderate position. The findings

⁹Seymour Lieberman, "The Effects of Change in Roles on the Attitudes of Role Occupants," Human Relations, 1956, 9, pp. 385-402.

also generally supported the thesis that change in response was more dependent on the relationship of the role assigned to the subjects' prior attitude than it was dependent on the strength with which the subject held his prior position. The study supported the hypothesis that role-players responded more favorably to the role-playing than observers.¹⁰

Attitude change through reward of verbal behavior. Although Scott never used the term role-playing in connection with the attitude changes of his subjects in his experiment, his method and the activities of his subjects were highly related to the framework in which articles on role-playing are imbedded.¹¹

An experiment in attitude change was suggested to Scott by Doob's learning theory of attitude development. According to Doob an attitude may be regarded, like a habit, as an implicit anticipatory response which mediates overt behaviors, and arises out of them through response reinforcement.¹²

In Scott's study, seventy-two subjects were induced to engage in debates on three different issues, taking sides opposite to those which

¹⁰Alvar O. Elbing, "The Influence of Prior Attitudes on Role-playing Results," Personal Psychology, 1967, 20 (3), pp. 309-321.

¹¹W. A. Scott, "Attitude Change through Reward of Verbal Behavior," Journal of Abnormal and Social Psychology, 1957, 55, pp. 77-75.

¹²L. W. Doob, "The Behavior of Attitudes," Psychological Review, 1947, 54, pp. 135-156.

they had indicated as their own in an opinion pretest. The three issues were universal military training, night hours for women students, and de-emphasis of football. Half of the subjects were rewarded, in pre-determined order, by a purported vote which proclaimed them the better debaters; the other half were presumably punished by losing the debate. The debators were counseled to avoid mentioning to anyone that they did not really believe what they were to say. In essence, the debators were asked to role-play.

Post tests of the subjects' opinions showed winners of the debates changed their opinions in the direction of the role they played, while the debate losers did not change significantly. A control group of non-debators likewise showed no significant change in opinion.¹³

Role-playing experience and interpersonal adjustment. Mann and Mann attempted to test the assumption that role-playing experience increased interpersonal adjustment and attitude change. The experimental sample in the Mann and Mann study consisted of seventy-two subjects drawn at random from a graduate course in education. The subjects were stratified for race and sex and randomly assigned to groups of eight. Six experimental groups engaged in leaderless role-playing, while three control groups engaged in leaderless discussion. The various role-playing scenes were planned by the subjects themselves, utilizing materials presented in the graduate course. The groups met

¹³Scott, loc. cit.

four times a week for one hour over a three-week period. On the third and again on the tenth day of the group meetings the subjects rated each other on seven criteria associated with interpersonal adjustment.

An analysis of the data produced significantly greater increases on the criteria of "desirability as a friend", "aiding in the attainment of group goals", and "cooperativeness" than were found among discussion groups. In addition, significantly greater increase in interpersonal adjustment was noted in the role-playing than in the group discussion groups.¹⁴

In a somewhat more controlled experiment, Mann and Borgetta, using essentially the same paradigm as the Mann and Mann study, used Edwards Personal Preference Schedule, two sociometric questionnaires, two scores of expectations, eight group member rankings and ratings, three group member ratings of role-playing ability, and eight ratings made by observers in a situational test independent of the experimental sessions. This was done in order to ascertain any attitude change, behavior change, or personality change. None were significant.¹⁵ However, as Mann and Borgatta pointed out, this was a study of short-term role-playing, and under the experimental conditions utilized it was not reasonable to expect large alterations in attitudes,

¹⁴ John H. Mann and Carola H. Mann, "Role-playing Experience and Interpersonal Adjustment," Journal of Counselling Psychology, 1959, 6, pp. 148-152.

¹⁵ John H. Mann and Edgar F. Bogatta, "Personality and Behavior Correlates of Changes Produced by Role-playing Experience," Psychological Reports, 1959, 5 (3) pp. 505-526; see also Mann and Mann, loc. cit.

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personality and behavior patterns.

In a later study by Mann and Mann, the experimenters investigated the relative effectiveness of task-oriented study-group activity and role-playing activity in producing personality and behavioral change. In this study the groups were randomly chosen in a psychology class. The subjects of the role-playing group planned and supervised their own role-playing activities. During the experiment the members of the group subjectively evaluated the other members of the group. An analysis of group members ratings obtained at the third and tenth session indicated that study-group members changed significantly more than role-playing group members on the variables of "desirability as a friend," "leadership initiative," "cooperativeness," and "general adjustment."¹⁷

Effects of single and repeated exposure to the skit-completion method of role-playing. Lawshe, et. al., in their article concerning the effects of exposures to role-playing, reported the results of five studies conducted to evaluate the effects of single and repeated exposures to the skit-completion method of role-playing. In this approach, subjects were presented with a case involving the development of a problem situation and were required to enact a completion of the scene spontaneously.

¹⁶Mann and Borgatta, loc. cit.

¹⁷John H. Mann and Carola H. Mann, "The Relative Effectiveness of Role-playing and Task Oriented Group Experience in Producing Personality and Behavior Change," Journal of Social Psychology, 1960, 51 (5), pp. 313-317.

The experimenters concluded that the skit-completion method of role-playing was effective in allowing subjects to become more sensitive to social situations, increased perceptions of social cues, and enabled subjects to better cope with human problems presented to them.

A major conclusion was that "impact" occurred as a result of this type of role-playing. "Impact" was defined as a characteristic of the role-playing experience which allowed the subjects to criticize their own performance in human relations tasks, provided an adequate type of feedback to the subject regarding his performances, and served to emphasize a particular human relations factor in a strong, emotional manner.

Another major conclusion reached by the authors was that the beneficial effects of role-playing were capable of transferring to a second or novel human relations problem situation.¹⁸

Some personality correlates of concept-change through role-playing. Harvey and Beverly studied the interactional effects of three variables on opinion change, role-playing, authoritarianism, and status of the source of a role-relevant communication.¹⁹

In the study the subjects were divided according to high and low authoritarianism as determined by a scale of Webster, Sanford and

¹⁸C. H. Lawshe, R. A. Bolda, and R. L. Brune, "Studies in Management Training Evaluation II: 'The Effects of Role-playing'," Journal of Applied Psychology, XLIII, 1959, pp. 287-293.

¹⁹O. J. Harvey and G. D. Beverly, "Some Personality Correlates of Concept Change through Role-playing," Journal of Abnormal and Social Psychology, 1961, 63, pp. 125-130.

Freeman.²⁰ The subjects then were asked to write in private the best arguments they could muster in favor of alcohol. This side of the issue was assumed to be strongly opposite to their own beliefs because the subjects were students at a small Southern college that operated under the auspices of the Church of Christ. This group, which responded in favor of alcohol, was called the role-playing group.

Immediately prior to the playing of the role, the subjects were exposed to a communication that favored the sale of alcohol under narrowly prescribed conditions. The communication was presented to the subjects (anonymous) individually. In the High Status condition, the communication was depicted by the instructor as a speech that had been delivered by a Church of Christ preacher. In the Low Status condition, the communication was depicted by the instructor as a speech made by an unidentified speaker.

Following exposure to the communication, approximately half of the subjects were retested immediately on their attitudes toward alcohol (no role condition) while the other half were retested after they had written the pro-alcohol arguments (role condition). The subjects' attitudes toward alcohol before and after the experimental treatments were assessed by a graphic rating scale, constructed especially for

²⁰H. Webster, N. Sanford and M. S. Freedman, "A New Instrument for Studying Authoritarianism," Journal of Psychology, 1955, 40, pp. 73-84.

this study, which requested the subject to indicate his position on each of the items by checking at the appropriate point on a line between the extreme points of complete agreement and complete disagreement.

The subjects were also tested on their ability to reproduce the main arguments of the communication and on the extent to which they attributed negative motives to the source of the incongruous communications.

Harvey and Beverly concluded that role-playing represented by presentation of self-negating arguments, had a significantly greater positive effect on opinion change than did no role-playing, and that role-playing interacted with authoritarianism. Persons higher in authoritarianism were influenced more positively by playing the role than were persons lower in authoritarianism. Role-playing failed to interact significantly with status of the precommunication source, but status interacted significantly with authoritarianism with the higher authoritarians being more influenced than the lower authoritarians by the high status source in the no role condition, and with reverse effects in the no role, low status source condition. Despite a failure of the more authoritarian subjects to get the points of the speaker's arguments, they nevertheless changed their opinions more than did the less authoritarian subjects in the no role condition when the source of the communication was high status, although not significantly more so.²¹

²¹Harvey and Beverly, loc. cit.

Effectiveness of emotional role-playing in modifying smoking habits and attitudes. An experiment by Janis and Mann was designed to investigate the effectiveness of emotional role-playing in modifying smoking habits and attitudes toward cigarette smoking. It was pointed out that when people stopped smoking after direct encounters with cancer victims, it was partly because of empathic reactions involving the realization that if it can happen to others, it can happen to themselves. Furthermore, the experimenters stated that a marked change in attitude and behavior was likely to occur if a smoker could have no longer relegated the feared consequences to the category of remote or irrelevant dangers.

It was with these concepts in mind that Janis and Mann assumed that the technique of role-playing, which had been found to be effective in facilitating attitude change, might be used in a way that would provide an empathic contact experience similar to the type of direct contact that occasionally had lead to spectacular conversion.

The subjects were twenty-six women, eighteen to twenty-three years of age, all of whom volunteered to participate in a research study under the auspices of their local state college. It was assumed that none of them knew that the purpose of the experiment had anything to do with changing their smoking habits.

Fourteen women were asked to play the role of a lung cancer patient who received bad news from a physician, while a control group listened to a tape recording of the session. The subjects were asked to act out each of the five following scenes as realistically as

possible. All were designed to arouse fear and anxiety:

Scene 1. Soliloquy in the waiting room;

Scene 2. Conversation with the physician as he gives the diagnosis;

Scene 3. Soliloquy while physician phones for a hospital bed;

Scene 4. Conversation with the physician concerning arrangements for hospitalization;

Scene 5. Conversation with the physician about the causes of lung cancer.

An attitude questionnaire concerning smoking was administered to both groups before and after the experimental treatments. A follow-up measure was also conducted two weeks later to see if there was any significant behavior and attitude change.

In general, the role-playing group showed markedly greater changes in attitude and behavior than the control group and reported a great deal more fear and anxiety as a result of the experience than did the control group. The high level of fear, anxiety, and vigilance aroused by the realistic quality of the experimental situation appeared to be a factor responsible in the attitude and behavior change.²²

Mann and Janis conducted a study on the long-term effects of emotional role-playing in which follow-up interviews were conducted

²²Irving L. Janis and Leon Mann, "Effectiveness of Emotional Role-playing in Modifying Smoking Habits and Attitudes," Journal of Experimental Research in Personality, 1965, 1 (2), pp. 84-90.

with subjects who participated in their 1965 experiment.²³ The experimenters were interested in investigating the long-term changes in smoking habits produced by the emotional role-playing procedure which required the subjects to act for one hour like a lung cancer victim.

The results indicated that over an eighteen-month period the subjects who had actively engaged in the emotional role-playing performance consistently showed significantly less cigarette consumption than the passive control group who had heard a recording of an emotional role-playing performance.

During the eighteen-month period between the role-playing session and the follow-up study, the Surgeon General's report on the detrimental effects of smoking gained public prominence and appeared to produce a further decrease in the cigarette consumption of both experimental groups, but in an additional group of untreated control subjects only a temporary decrease in smoking was evident.²⁴

Mann designed a study to replicate and extend an earlier study by Janis and Mann using emotional role-playing as a technique for the modification of smoking habits and attitudes.²⁵ Mann, in this

²³Leon Mann and Irving L. Janis, "A Follow-up Study on the Long-term Effects of Emotional Role-playing," Journal of Personality and Social Psychology, 1968, 8 (4, Part 1), pp. 339-342; see also Janis and Mann, loc. cit.

²⁴Mann and Janis, loc. cit.

²⁵Leon Mann, "The Effect of Emotional Role-playing on Desire to Modify Smoking Habits," Journal of Experimental Social Psychology, 1967, 3 (4), pp. 334-348; see also Janis and Mann, loc. cit.

experiment, used sixty-four male and female subjects who role-played under three conditions: a fear condition, a shame condition, and a cognitive condition. With each role-playing condition there were opportunities for either high or low verbalization. Questionnaires were administered to the groups before and after treatments.

In the fear group the subjects role-played a lung cancer patient whose doctor had advised immediate hospitalization and surgery. In the shame group the subject role-played a tobacco-addicted patient whose doctor tried to shame the subject to the degree that he would stop smoking. In the cognitive role-playing group the subject role-played a debater who argued why smokers should quit smoking.

The results of the study indicated that the fear role-playing group was more effective than the cognitive procedure, but was not significantly more effective than the shame role-playing group. The fear group was significantly more emotionally involved, shocked, depressed, and afraid than the other groups. The cognitive role-playing condition produced little change in the desire to modify smoking habits; the shame group caused moderate change, and the fear group led to a comparatively large change.

The fear and shame role-playing groups showed significantly more change than the cognitive role-playing group in the modification of desire to reduce and stop smoking. In males, generally, high verbalization was associated with significantly more change in the desire to modify smoking behavior than was low verbalization. The differences, as compiled from subjects' reports, between the fear group and each of the other two

groups were not significant in the number of cigarettes smoked after a two-week period. There was a tendency, however, for the fear group to smoke fewer cigarettes.²⁶

Streltzer and Koch conducted a study to replicate one carried out by Janis and Mann to determine whether an experimental group of subjects who performed the role of a lung cancer patient would show more change in smoking attitudes and habits than a comparable control group.²⁷ The experimenters also attempted to determine if subjects would be more influenced by a male of high status, a medical doctor, than a female of a lesser degree of status.

Each of twenty female subjects participated in a role-playing session with one of the two experimenters. Ten subjects were used as a control group.

The results of the study indicated that the two experimental groups who role-played with a high or low status experimenter both showed significantly greater changes in smoking habits and attitudes toward smoking than a comparable group of ten control subjects. Subjects who role-played with the experimenter of high status showed significantly greater attitudinal change than subjects who role-played with the experimenter of a lesser status. There was no significant difference

²⁶Mann, loc. cit.

²⁷Nancy E. Streltzer and Glen V. Kick, "Influence of Emotional Role-playing on Smoking Habits and Attitudes," Psychological Reports, 1968, 22 (3, Part 1), pp. 817-820; see also Janis and Mann, loc. cit.

between the two experimental groups in their change of smoking habits.²⁸

The influence of incentive conditions on the success of role-playing in modifying attitudes. Janis and Guilmore noted that in experiments which confirmed the positive effects of role-playing, the role-playing task was assigned by someone who was himself a highly prestigious person or the representative of a highly prestigious person whose goals were consonant with those of the subject. Janis and Guilmore designed an experiment to investigate the effects of favorable versus unfavorable sponsorship, and to test opposing predictions from dissonance theory and incentive theory.²⁹

According to incentive theory, as stated by Hovland, Janis and Kelley, role-playing will be more successful in inducing attitude change if the sponsor is perceived as someone whose affiliations are benign in character and whose intentions are to promote public welfare, than if he is perceived as someone whose affiliations and purposes are commercial or exploitative.³⁰

Exactly the opposite prediction would be made by the dissonance theory explanation of role-playing effects, which postulates that "the existence of dissonance (among cognitive elements) gives rise

²⁸Streltzer and Koch, loc. cit.

²⁹Irving L. Janis and J. B. Guilmore, "The Influence of Incentive Conditions on the Success of Role-playing in Modifying Attitudes," Journal of Personality and Social Psychology, 1965, 1 (1), pp. 17-27.

³⁰C. Hovland, I. Janis, and H. Kelly, Communication and Persuasion (New Haven: Yale University Press, 1953), pp. 223-237.

to pressures to reduce the dissonance and to avoid increases in dissonance."³¹

A complete rationale as to why dissonance theory predicted the following proposition can be found in the study by Janis and Guilmore.³² Their prediction was that more dissonance and, therefore, more attitude change would result from role-playing if the sponsor were perceived as having objectionable affiliations or purposes than if he were perceived as having intentions consonant with the subject's own goals. It was a necessity, of course, that the subjects be induced to conform to his role-playing instructions.

Each of the sixty-four male college students was interviewed privately in his own dormitory room by a total stranger who introduced himself as a pollster working for a private research company. Each subject was assigned on a stratified random basis to one of eight experimental conditions in a 2 x 2 x 2 factorial design. This enabled the experimenters to ascertain the main effects and interactions of three independent variables; overt role-playing versus passive exposure to the same instructions and information, unfavorable (blatantly commercial) sponsorship of the role-playing assignment versus favorable (public welfare) sponsorship, and small monetary reward (one dollar) versus large reward (twenty dollars) for carrying out the role-playing task.

³¹L. Festinger, A Theory of Cognitive Dissonance (Stanford: Stanford University Press, 1957), p. 31.

³²Janis and Guilmore, op. cit., p. 18.

An analysis of variance of attitude scores showed that there were no significant main effects, but, as predicted by incentive theory, there was a significant interaction such that more attitude change occurred when overt role-playing was carried out under favorable sponsorship than under unfavorable sponsorship conditions.

In general, the results failed to verify predictions made from dissonance theory and tended to support an incentive theory of attitude change.

Counter-norm attitudes induced by consonant versus dissonant conditions of role-playing. In much of the research in attitude change produced by role-playing, the beliefs and judgments investigated were relatively innocuous ones about which communities tolerated a wide range of divergent positions. Consequently, there was little likelihood that the induced changes would be regarded by subjects as violating the norms of any of their reference groups.

One of the purposes of an experiment by Elms and Janis was to expand the systematic investigation of the role-playing phenomenon to counter-norm attitudes by asking American college students to argue in favor of a pro-Soviet Union proposal that entailed deviating to some extent from the usual norms of most American groups and the national society at large.

The Elms and Janis study was not designed merely to determine if the role-playing phenomenon could have been replicated with a

³³Janis and Guilmore, op. cit., pp. 17-27.

counter-norm attitude. Its main purpose was to test opposing predictions from two theories of attitude change, both of which had testable consequences concerning the ways in which justification and rewards for the role-playing performance influenced the amount of attitude change.³⁴ One of the rival theories in question, known as dissonance theory, predicted that when very weak incentives were used to induce someone to play the role of an advocate of an unaccepted position (e.g., unfavorable sponsorship and low financial reward), the amount of dissonance would be greater than if strong incentives were used, and hence the person would show more attitude change.³⁵

Incentive theory predicted that just the opposite was the case. That is, the amount of attitude change induced by role-playing would increase if a large monetary reward generated positive feelings of satisfaction, but would decrease if the same large reward generated negative effects which tend to interfere with the type of open-minded set needed to be influenced by one's own improvised arguments as they are being scanned during the role-playing performance.³⁶

In the study by Elms and Janis, 125 college students were asked to invent arguments in favor of a counter-norm proposal, allegedly put forth by the Soviet Union to allow American students to go to Russia

³⁴Alan C. Elms and Irving L. Janis, "Counter-norm Attitudes Induced by Consonant Versus Disonant Conditions of Role-playing," Journal of Experimental Research in Personality, 1965, 1 (1), pp. 50-60.

³⁵Festinger, loc. cit.

³⁶Hovland, Janis, and Kelly, loc. cit.

for their entire four-year college education. A three dimensional factorial design was used in order to test hypotheses about attitude change as a function of overt versus non-overt role-playing, unfavorable (Soviet Union) versus favorable (U. S. Government) sponsorship of the role-playing task, and small versus large monetary reward for the role-playing performance.

A high degree of acceptance of the counter-norm proposal occurred only under conditions of overt role-playing when acceptable justification and large rewards were given.

Elms and Janis concluded that the predictions from incentive theory were borne out by their main results which showed that a gain in attitude change was produced by overt role-playing under favorable inducement conditions.

Supplementary data on the quality of the essays did not provide evidence that the gain was mediated by a corresponding increase in biased scanning while subjects improvised arguments in favor of assigned position. The question of how the positive inducements led to increased attitude change remained an open question to be settled by more research.³⁷

Brehm stated that the conclusion by Elms and Janis (1965) that their data contradicted dissonance theory was not borne out by close

³⁷Elms and Janis, loc. cit.

inspection of their methods and data.³⁸ Brehm stated that their method for creating high dissonance, unfavorable sponsorship, probably made the relevant attitude relatively resistant to change toward the position of the discrepant essay, thus forced the subjects who agreed to write a discrepant essay to bolster their initial positions in order to reduce dissonance. Furthermore, subjects who actually wrote the discrepant essay, and were thereby more committed to the discrepant position, responded quite differently and tended to show the usual dissonance reduction efforts of change toward the discrepant position. Brehm concluded that although experiments failed to disconfirm the dissonance hypothesis, they did help to delineate incentive theory.³⁹

Elms, in a later article, stated that incentive theory was advanced as more satisfactory than dissonance theory in dealing with attitude change induced through role-playing. Incentive theory and dissonance theory yielded opposite predictions about attitudinal results of role-playing which involved different incentive levels. Elms reviewed the experimental studies in the role-playing field and concluded that the results which appeared to support dissonance theory could have been generally attributed to the arousal of interfering negative affect by increased reward levels. When opportunity for

³⁸J. W. Brehm, "Comment on 'Counter-norm Attitudes Versus Dissonance Conditions of Role-playing'," Journal of Experimental Research in Personality, 1965, 1 pp. 60-64; see also Elms and Janis, loc. cit.

³⁹Brehm, loc. cit.

Investigation of such interfering reactions was low, increased reward could have led to more effective biased scoring, and thus to more attitude change.⁴⁰

Influence of fantasy ability on attitude change through

role-playing. A personality variable that a study by Elms was concerned with was fantasy ability, the ability to imagine things or situations other than current reality.

Elms hypothesized that the ability to imagine oneself vividly as holding an attitude different from one's own (rather than simply the ability to imagine incentives) would result in greater attitude change under certain circumstances than an ability to imagine such a state only vaguely. Elms stated that this more empathic form of fantasy ability would seem especially likely to be called into play by the instructions and expectations in a role-playing situation. Elms attempted to test this hypothesis.

The main dependent variable he used was attitude change as measured by before-, after-, and delayed aftertests of attitudes. The main independent variable was the type of persuasive approach, either role-playing or a more passive, non-role-playing orientation to persuasive arguments. Scores on several personality tests were utilized as correlated predispositional variables.

⁴⁰Alan C. Elms, "Role-playing, Incentive, and Dissonance," Psychological Bulletin, 1967, 68 (2), pp. 132-148.

In general, cigarette smokers were asked to play the role of a non-smoker, attempting to convince other smokers to stop the habit. Eighty smokers were assigned randomly to role-play or to listen to role-player's persuasive arguments, and were tested in pairs. The scores on several measures of fantasy ability and other personality variables were collected for all of the subjects.

Before a relationship between fantasy ability and attitude change could have been demonstrated, attitude change must have occurred. It did. In role-playing and non-role playing conditions alike, and whether change was measured on immediate or delayed post-tests, mean attitude change was significantly different from zero.

Scores of male role-play subjects on the Empathic Fantasy Scale correlated $+0.69$ with attitude change between pretest and delayed posttest. This was the only correlation between a personality measure and male subjects' delayed attitude change which was significantly different from zero. The correlation between Empathic Fantasy Scale scores and delayed attitude change for male non-role players was $+0.18$.⁴¹ The difference between these two correlations was significant.

Effects of situational and personality variables on improvisation and attitude change. Greenbaum designed a study to test the effect of role-playing on attitude change which took into account both dissonance

⁴¹Alan C. Elms, "Influence of Fantasy Ability on Attitude Change through Role-playing," Journal of Personality and Social Psychology, 1966, 4, (1), pp. 36-43.

reduction and approval motivation. A subject may have reduced dissonance, if other possibilities were removed, by changing his attitude in line with the role he played. However, in Greenbaum's view, the motive to gain approval of the evaluator and other personality variables may have been dominant in previous studies of role-playing and attitude change, and may have contaminated the results. Therefore, to control the contaminating variable, Greenbaum had two levels of choice in making a counter-attitudinal speech. Some of the subjects were given no choice; they were required to give a speech on civil defense which contained counter-attitudinal information. Other subjects were given a choice but the evaluator asked them to take a position, which was counter to their attitude as indicated by a premeasure, because he needed subjects to take that position. After subjects gave the speech, the different groups were given five levels of reinforcement. That is, the subjects were told that a doctor was listening to their speech, and the evaluations, which ranged from strongly negative to strongly positive, were given to the subjects. Measures of need for approval, self-esteem, and attitude change were also obtained from the subjects.

The results of the study indicated that the effects of choice and reinforcement on the subject were not significant, but low-need-for-approval subjects changed more than high-need-for-approval subjects, both immediately and after a two-week delay. Subjects who were both low in need for approval and high in self-esteem changed more than any other subgroup. No relationship between improvisation and attitude change was found. Greenbaum suggested that the critical variables

affecting attitude change in improvisation studies were not choice, positive versus negative consequences, improvisation itself, and suggested that previous studies which pointed to the importance of these variables were not free of contamination from situational demands. The conclusion reached was that the critical variables involved in attitude change were the fact of active participation in counter-attitudinal behavior, a minimum of justification, and the absence of situational demands. It was these factors, in Greenbaums' view, which affected subjects who were previously thought to be resistant to attitude change, and it was these same factors which seemed to protect from influence those individuals previously thought to be persuasible.⁴²

II. SUMMARY

The literature and research included in this chapter were selected because of their direct relationship to this study. The literature and research justified the design and purposes of the study.

Conclusions of the studies. The conclusions of the studies related to role-playing were as follows:

Overt verbalization induced by role-playing tended to augment

⁴²Charles W. Greenbaum, "Effect of Situational and Personality Variables on Improvisation and Attitude Change," Journal of Personality and Social Psychology, 1966, 4 (3), pp. 260-269.

the effectiveness of a persuasive communication.⁴³

Role-playing experiences changed specific and generalized emotionally-held attitudes, role position influenced involvement in the drama and brought about attitude change, and personality factors limited the effectiveness of role-playing as a force for attitude change.⁴⁴

The amount of opinion change produced through active participation was dependent upon the amount of improvisation during role-playing.⁴⁵

Quality of improvisation in role-playing bore no relation to attitude change, and attention should be centered upon the role of persuasive effort per se, as well as upon intellectual stimulation aspect of invention of arguments.⁴⁶

The role that a person occupied had an impact on his attitudes and value orientation.⁴⁷

⁴³Irving L. Janis and Bert T. King, "The Influence of Role-playing on Opinion Change," Journal of Abnormal and Social Psychology, 1954, 49, pp. 211-218.

⁴⁴Frances M. Culbertson, "Modification of an Emotionally Held Attitude through Role-playing," Journal of Abnormal and Social Psychology, 1957, 54, pp. 230-233.

⁴⁵Bert T. King and Irving L. Janis, "Comparisons of the Effectiveness of Improvised Role-playing in Producing Opinion Changes," Human Relations, 1956, 9, pp. 177-186.

⁴⁶Philip G. Zimbardo, "The Effect of Effort and Improvization on Self Persuasion Produced by Role-playing," Journal of Experimental and Social Psychology, 1965, 1 (2), pp. 103-120.

⁴⁷Seymour Lieberman, "The Effects of Change in Role on the Attitudes of Role Occupants," Human Relations, 1956, 9, pp. 385-402.

Subjects who played a role compatible with their attitudes tended to move toward a position more extreme than their original position, and those who played a role opposite to their original position tended to move toward a more moderate position.⁴⁸

Winners of a debate changed their opinions in the direction of the role they played, while debate losers and non-debaters showed no significant change in opinion.⁴⁹

Leaderless role-playing produced significantly greater increases on the criteria of "desirability as a friend", "aiding in the attainment of group goals", "cooperativeness", and "interpersonal adjustment" than were found among leaderless discussion groups.⁵⁰

No significant attitude and behavior changes were found when a number of personality measures were used after a short-term role-playing session.⁵¹

Study-group members changed significantly more than role-playing

⁴⁸Alvar O. Elbing, "The Influence of Prior Attitudes on Role-playing Results," Personnel Psychology, 1967, 20 (3), pp. 309-321.

⁴⁹W. A. Scott, "Attitude Change through Reward of Verbal Behavior," Journal of Abnormal and Social Psychology, 1957, 55, pp. 72-75.

⁵⁰John H. Mann and Carola H. Mann, "Role-playing Experience and Interpersonal Adjustment," Journal of Counselling Psychology, 1959, 6 pp. 148-152.

⁵¹John H. Mann and Edgar F. Bogatta, "Personality and Behavior Correlates of Changes Produced by Role-playing Experience." Psychological Reports, 1959, 5 (3), pp. 505-526.

group members on the variables of "desirability as a friend," "leadership initiative," "cooperativeness," and "general adjustments."⁵²

The skit-completion method of role-playing was effective in allowing subjects to become more sensitive to social situations, increased perceptions of social cues, and enabled subjects to better cope with human problems presented to them.⁵³

Role-playing, represented by presentation of self-negating arguments, had a significantly greater positive effect on opinion change than did no role-playing, and persons higher in authoritarianism were influenced more positively by role-playing and high status source than were lower authoritarianism subjects.⁵⁴

The emotional role-playing group of subjects playing the role of a lung cancer patient showed markedly greater changes in attitude and behavior than the control group.⁵⁵

⁵²John H. Mann and Carola H. Mann, "The Relative Effectiveness of Role-playing and Task Oriented Group Experience in Producing Personality and Behavior Change," Journal of Social Psychology, 1960, 51 (5), pp. 313-317.

⁵³C. H. Lawshe, R. A. Bolda, and R. L. Brune, "Studies in Management Training Evaluation II: 'The Effects of Role-playing'," Journal of Applied Psychology, XLIII, 1959, pp. 287-293.

⁵⁴O. J. Harvey and G. D. Beverly, "Some Personality Correlates of Concept Change through Role-playing," Journal of Abnormal and Social Psychology, 1961, 63, pp. 125-130.

⁵⁵Irving L. Janis and Leon Mann, "Effectiveness of Emotional Role-playing in Modifying Smoking Habits and Attitudes," Journal of Experimental Research in Personality, 1965, 1 (2), pp. 84-90.

Over an eighteen-month period, the subjects who had actively engaged in emotional role-playing performance showed significantly less cigarette consumption than a passive control group who had heard a recording of an emotional role-playing performance.⁵⁶

Fear and shame role-playing showed significantly more temporary change than cognitive role-playing in modifying desire to reduce and stop smoking.⁵⁷

Role-playing groups with a high or low status experimenter showed significantly greater changes in smoking habits and attitudes than controls, and there was significantly greater attitude, but not behavior change with an experimenter of high status than with a low status one.⁵⁸

The results of a role-playing study failed to verify predictions made from dissonance theory and tended to support an incentive theory of attitude change.⁵⁹

Predictions from incentive theory were borne out by results which showed that a gain in attitude change was produced by overt role-playing

⁵⁶Leon Mann and Irving L. Janis, "A Follow-up Study on the Long-term Effects of Emotional Role-playing," Journal of Personality and Social Psychology, 1968, 8 (4, Part 1), pp. 339-342.

⁵⁷Leon Mann, "The Effects of Emotional Role-playing on Desire to Modify Smoking Habits," Journal of Experimental Social Psychology, 1967, 3 (4), pp. 334-348.

⁵⁸Nancy E. Streltzer and Glen V. Kock, "Influence of Emotional Role-playing on Smoking Habits and Attitudes," Psychological Reports, 1968, 22 (3, Part 1), pp. 817-820.

⁵⁹Irving L. Janis and J. B. Guilmore, "The Influence of Incentive Conditions on the Success of Role-playing in Modifying Attitudes," Journal of Personality and Social Psychology, 1965, 1 (1), pp. 17-27.

under favorable inducement conditions.⁶⁰

An article supported dissonance theory.⁶¹

Incentive theory was advanced as more satisfactory than dissonance theory in dealing with attitude change induced through role-playing.⁶²

The ability to imagine oneself vividly as holding an attitude different from one's own may result in greater attitude change under certain circumstances than an ability to imagine such a state only vaguely.⁶³

The critical variables involved in attitude change in role-playing were the fact of active participation in counterattitudinal behavior, a minimum of justification, and the absence of situational demands.⁶⁴

⁶⁰Alan C. Elms and Irving L. Janis, "Counter-norm Attitudes Induced by Consonant Versus Dissonant Conditions of Role-playing," Journal of Experimental Research in Personality, 1965, 1 (1), pp. 50-60.

⁶¹J. W. Brehm, "Comment on 'Counter-norm Attitudes Versus Dissonance Conditions of Role-playing'," Journal of Experimental Research in Personality, 1965, 1, pp. 60-64.

⁶²Alan C. Elms, "Role-playing, Incentive, and Dissonance," Psychological Bulletin, 1967, 68 (2), pp. 132-148.

⁶³Alan C. Elms, "Influence of Fantasy Ability on Attitude Change through Role-playing," Journal of Personality and Social Psychology, 1966, 4 (1), pp. 36-43.

⁶⁴Charles W. Greenbaum, "Effect of Situational and Personality Variables on Improvisation and Attitude Change," Journal of Personality and Social Psychology, 1966, 4 (3), pp. 260-269.

CHAPTER III

METHODS AND PROCEDURES

An introduction to the main steps in the administration of the study, the design, the subjects, the experimental procedures, the role-playing script rationale and the test of anxiety used, the method of analysis and the statistical tests used, and a summary are encompassed in this chapter.

I. INTRODUCTION

The main steps in the administration of the study were as follows:

1. A week before the treatment of the experimental and control groups, the Taylor Manifest Anxiety Scale (see Appendix B) was administered.
2. The subjects in the experimental and control groups were assigned and equated on the basis of similar

scores on the Taylor Manifest Anxiety Scale.¹

3. Members of the control and experimental groups were paired and faced each other.
4. Members of the experimental group were required to read a prepared script (see Appendix A) aloud three times with feeling and to place themselves in the position of someone who was being academically dismissed.
5. Members of the control group were required to listen three times to the enactment of the role-playing session.
6. Immediately after the treatment to the experimental and control groups, the subjects again completed the Taylor Manifest Anxiety Scale (see Appendix B).
7. At the end of the classroom session, it was announced to both groups that a week from that time a test in the course would be given (see Appendix D). Then, study guides were distributed to direct their studying (see Appendix C).
8. A week later a midterm examination (see Appendix D) was given.

¹Janet A. Taylor, "A Personality Scale of Manifest Anxiety," Journal of Abnormal and Social Psychology, 1953, 48 (2), pp. 285-290.

9. An analysis of the data was done with the use of the F Test for the means in the analysis of variance.²

II. THE DESIGN

The independent variable, the variable under experimental control with which the changes studied in the experiment were correlated, was the role-playing. The dependent variables, the variables whose measured changes are attributed to, or correspond to, changes in the independent variable, were the level of anxiety and the attitude and behavior change produced by the role-playing. The experimental group, that group of subjects given the treatment whose effect was under investigation, were the subjects who role-played. The control group, that group not given the treatment whose effect was under study, were the subjects who listened to the role-players.³

III. THE SUBJECTS

A total of one-hundred and three subjects were used in the study. The subjects were males and females who were enrolled in a sophomore level

²Allen L. Edwards, Experimental Design in Psychological Research (New York: Holt, Rinehart and Winston, 1960), pp. 131-132.

³F. J. McGuigan, Experimental Psychology (Englewood Cliffs, New Jersey, 1960), pp. 1-14.

course in psychology at the Kansas State Teacher's College at Emporia. Participation in the study was integrated into the regular classroom schedule. Seventeen of the students in the course did not participate in the study and were dropped for various reasons such as absences and illnesses. The experimental group contained fifty-one subjects and the control group contained fifty-two subjects (see Appendix E). The subjects were approximately equated in pairs, in anxiety, and randomly assigned to this experimental and control groups. Thus, the control and experimental groups should not have been significantly different in anxiety before the treatment.

IV. THE EXPERIMENTAL PROCEDURES

When the subjects arrived at the classroom on the day of the initial administration of the anxiety scale, they were informed that the instructor was conducting a survey in all his classes and that he would like them to answer a questionnaire. They were requested to write their names on the forms, but were also informed that all responses would be confidential. The subjects were then given the anxiety scale to complete, but under the innocuous title of Biographical Inventory (see Appendix B).

A week later, after the experimental and control groups had been constructed, the instructor introduced the treatment session and role-playing. The introduction was paraphrased from a previously published

study.⁴ The instructor read the introduction to the subjects (see Appendix F).

The subjects were then called by the instructor in pairs according to the prearranged matching of control and experimental groups. The role-player was handed a script (see Appendix A) and told he was to be the role-player, and both subjects were told to take a position in the room facing each other and wait for further instructions.

When all the subjects were in position, the instructor told the subjects to listen to the instructions presented on the front of the script (see Appendix A) while the instructor read them aloud.

The role-players were told to read the script aloud slowly the first time through just to familiarize themselves with the script. The second time they were told to place themselves in the role and actually experience the feelings as they read it aloud the second time.

The subjects were then told after they completed the second reading that they were to read through the script a third time, but this time they were to go very slowly and to dramatize and experience what it felt like.

When the role-playing session was over, the anxiety scale was readministered to all of the subjects (see Appendix B). At the end of the classroom period, it was announced by the instructor that in a week there would be a midterm examination. Study guides (see Appendix C) were distributed to direct the students' studying.

⁴Leon Mann, "The Effects of Emotional Role-playing on Desire to Modify Smoking Habits," Journal of Experimental Social Psychology, 1967 3 (4), pp. 334-348.

V. THE ROLE-PLAYING SCRIPT RATIONALE
AND THE TEST OF ANXIETY USED

The script was written by the experimenter for the purpose of motivating the student to study diligently and score well on the midterm examination. It was designed to incorporate the responses on the manifest anxiety scale.⁵ This was done on the assumption that the subject who was role-playing empathically would experience manifest anxiety. Taylor and Spence, in reference to anxiety and learning, stated the following:

A number of recent studies...have been concerned with an attempt to study the effects of different levels of motivation on performance in a variety of learning situations. In the first of these studies Taylor...proposed the hypothesis that (a) the total effective drive strength (d) of a subject was, in part, a function of the level of internal anxiety or emotionality of the subject, and (b) the level of this internal emotional state would, in turn, be reflected by the responses made in a test of so called manifest anxiety. This latter test consisted of items taken from the Minnesota Multiphasic Personality Inventory that had been judged by clinical psychologists to be indicative of a carefully defined behavior syndrome, manifest anxiety. The effect of different drive levels on performance in classical eyelid conditioning groups of subjects, one of which had scored at the high end of the scale and the other at the low end. The results showed that the anxious (high drive) group was markedly superior to the nonanxious (low drive) group in the amount of conditioning exhibited. A subsequent study by Spence and Taylor...confirmed this finding.

On the assumption that scores on the manifest anxiety scale reflect a difference in D, the findings of these two studies are in line with Hull's theoretical formulation...that response

⁵Taylor, loc. cit.

strength (r) will be a function of excitatory potential (E), which is in turn a function of D and a hypothetical learning construct H . More completely the theoretical formulation may be represented as follows:

$$\begin{aligned} R &= f(E) \\ E &= f(H \times D) \\ D &= f(\text{Anxiety score}) \\ H &= f(\text{No. conditioning trials}) \end{aligned}$$

It is obvious that the higher the anxiety score the stronger will be the excitatory potential and the greater the response strength. It should be noticed, however, that the theoretical implication of increasing drive level of S will depend upon the nature of the behavior situation. In situations in which there is but a single response tendency, increase in strength of D results in a higher value of E and hence implies a stronger response. This is the state of affairs in classical conditioning, in which, by virtue of the control of the stimulus conditions there is but a single response.⁶

With the aforementioned quotation in mind, phase I of the role-playing session was designed to raise the subject's manifest anxiety about low performance in school, by bringing him face-to-face with the feelings and consequences of academic dismissal.

Phase II was designed to direct the anxiety, drive and perhaps, attitude shift toward studying a solution for his anxiety. That is, to score high on an upcoming examination.

Phase III was designed to further direct anxiety and drive toward a resolution of the aroused fear. This phase was designed to spell-out specifically the study method by which a high score could be

⁶Janet A. Taylor and Kenneth W. Spence, "The Relationship of Anxiety Level to Performance in Serial Learning," The Journal of Experimental Psychology, 1962, 8, 44 (2), pp. 61-64.

attained on the upcoming test.⁷

The final step after the role-playing session was the distribution of a study guide which was designed directly from the upcoming examination. This was to specifically direct the subjects' attention to material which would appear on the test. At that time they were told, as well as shown on the study guide, that the test would be a true-false type, and that the number of wrong scores would be subtracted from the number of right ones. Unanswered scores, they were told, would not count against them.

This was done in an attempt to discourage guessing and to also distinguish between those subjects who studied more and knew the material more thoroughly and those who did not. It was assumed that those who learned the material more fully would have more right answers, fewer wrong answers, fewer not answered scores, and higher final examination scores.

VI. THE METHOD OF ANALYSIS AND THE STATISTICAL TESTS USED

In this section are included the method of analysis, the analysis of variance technique, the F test, and a defense of the statistical techniques used.

⁷Francis P. Robinson, Effective Study (New York: Harper and Brothers, 1961), pp. 278.

The method of analysis. The analysis of variance technique was used to compare the mean scores of the control and experimental groups.⁸ The following were the steps in comparing the groups with the analysis of variance technique:

1. The prior anxiety scores of the experimental and control groups were compared.
2. The post anxiety scores of the two groups were compared.
3. The prior and post anxiety scores of the experimental group were compared.
4. The prior and post anxiety scores of the control group were compared.
5. The prior experimental and post control scores were compared.
6. The post experimental and prior control scores were compared.
7. The final examination scores of the experimental and control groups were compared.
8. The not answered scores of the two groups were compared.
9. The right answered scores of the two groups were compared.
10. The wrong answered scores of the two groups were compared.

The analysis of variance technique. In this study we were interested in comparing mean scores of groups. One statistical technique for this purpose is the analysis of variance. Huntsburger stated the following about this technique:

In chapter 6 we looked at some of the inferences that are possible when we have 2 independent random samples from normal populations. We now extend these methods to the general case of k samples ($k = 2$), one from each k populations which have the same variance, but whose means may or may not be the same. As in the 2-sample case, our objectives are to estimate the population means, to estimate the common variance, and to make comparisons among the means. It is here that we shall become acquainted with one of the most powerful tools in the statistician's kit, the analysis of variance.

The analysis of variance is an arithmetic device for partitioning the total variation in a set of data according to the various sources of variation that are present. It results in a summary table...(see Table I, page 55)... which is, in fact, the analysis of variance table for simple linear regression; and it provides a convenient form for summarizing and for presenting the information contained in a set of data. Furthermore, study of the complete analysis of variance table for a set of experimental or sample survey data will show us whether or not valid tests of certain hypotheses exist, and if so, how the test should be performed.

The F test. After the analysis of variance was computed and summarized, to determine if there was a difference between the two groups, the F test was used. McGuigan stated the following about the F test:

...if our between groups mean square is sizable, relative to our within groups mean square, then we must conclude the dependent variable values for our groups are different.

However, we must again face the problem: how sizable is 'sizable', i.e., how large must the between component be in order for us to conclude that a given independent variable is effective? To answer this we apply a suitable statistical test. The test that is considered most appropriate is the F test, which was developed by Professor Sir Ronald Aymer Fisher, one of the outstanding statisticians of all time. It was named in his honor by another

⁹Ibid., pp. 212-213.

TABLE I*
SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	55.17	2	27.58	7.81
Within Groups	31.75	9	3.53	
Total	86.93	11		

*Adapted from F. J. McGuigan's Experimental Psychology: A Methodological Approach (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1960), p. 193.

outstanding statistician, Professor George W. Snedecor. The F test is defined as follows:

$$F = \frac{\text{Mean square between groups}^{10}}{\text{Mean square within groups}}$$

For the purposes of this study the level of significance was not at 0.05. Therefore, assuming that our value of F had a probability of less than 0.05, then we would reject the null hypothesis. We may then assert that there is a significant difference among our groups.¹¹

Defense of the statistical techniques used. There are a number of assumptions that must be met to be statistically pure when applying the analysis of variance and the F test. Hays listed a number of these assumptions.¹² Edwards stated the following about the assumptions:

There is considerable evidence to indicate that the common case in experimental work where the number of observations is the same for the various treatments, the F test for the means in the analysis of variance is little influenced by heterogeneity of variance... As Box (1953) has emphasized, since the F test is very insensitive to nonnormality and since with equal n's it is also insensitive to variance inequalities, it would be best to accept the fact that it can be used safely under most conditions. The F test of the analysis of variance, in other words, remains a robust test under a variety of violations of the assumptions on which it is mathematically based.¹³

It was with the robustness of the test in mind that it was used for analysis of the data in this study.

¹¹Ibid., p. 195.

¹²William L. Hays, Statistics for Psychologists (New York: Holt, Rinehart and Winston, 1963), pp. 378-380.

¹³Edwards, op. cit., p. 132.

VII. SUMMARY

This chapter contains the methods and procedures used in the study. In the introduction the main steps in the administration of the study were outlined. The design of the study was standard for psychological experiments with before and after measurements, a treatment session, and control and experimental groups. The subjects were sophomores in a psychology course at Kansas State Teachers College. The experimental procedures involved prior measures of anxiety, role-players and listeners who used a script concerned with academic failure, post measures of anxiety, and measures of scores on a midterm examination to test the effect that role-playing had on studying. The role-playing script rationale and the test of anxiety used were based on the assumptions that role-playing raised manifest anxiety and caused attitude and behavior change toward studying.

The section on method analysis and the statistical test used contained the method of analysis which listed the steps in comparing the groups through the use of the analysis of variance technique. The uses and bases of the analysis of variance technique were discussed. The rationale and use of the F test were discussed. Finally, a brief defense of the statistical techniques used was presented.

CHAPTER IV

ANALYSIS OF DATA

This chapter contains the analyses, summaries, interpretations of the data, and discussion of the results. In all instances the statistical technique known as the simple analysis of variance was used to compare groups, summaries of the results of the statistical calculations are contained in this chapter. All raw data can be found in the appendix (see Appendix E).

The analysis of the data was approached in several ways. First, following the basic hypothesis of the study, the two groups, role-players and listeners were compared. Next, the total group of subjects, role-players and listeners grouped together were compared on prior anxiety and post anxiety. The total group of subjects was compared after they had been categorized into those who increased in anxiety from prior to post measures, those who decreased, and those who remained the same. A comparison was made between all those subjects who increased in anxiety from prior to post measure and all those subjects who decreased.

I. ANALYSIS OF VARIANCE FOR ROLE-PLAYERS AND LISTENERS

Comparison of prior measures of anxiety. The role-players and listeners were assigned to the groups on the basis of similiarity on prior measures of anxiety scores. It was expected that the groups would not differ significantly on prior measures of anxiety.

Table II (page 60) gives the summary analysis of variance for the prior measures of anxiety of experimental and control groups. It was substantiated that the groups were not significantly different before treatment.

Comparison of post measures of anxiety. If the role-playing was more effective than merely listening, the post test of anxiety should have indicated that the role-players' anxiety was significantly higher than the listeners'.

Table III (page 61) gives the summary analysis of variance for the post measures of anxiety of experimental and control groups. It was not substantiated that the role-playing raised the level of anxiety significantly more than the listening.

Comparison of prior and post experimental anxiety. If the role-playing was effective in the expected direction, then the post measures of anxiety for the experimental group should have been higher than the prior measure.

Table IV (page 62) contains the summary analysis of variance for the prior and post measures of anxiety for the experimental group. It was not substantiated that the role-playing significantly raised the

TABLE II
ANALYSIS OF VARIANCE FOR PRIOR MEASURES OF ANXIETY
OF EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	4.3176	1	4.3176	0.059*
Within Groups	7375.8960	101	73.0386	
Total	7380.2136	102		

*F = 0.591 with 1 and 101 d.f. is not significant ($P > .05$).

TABLE III
 ANALYSIS OF VARIANCE FOR PRIOR MEASURES OF ANXIETY
 OF EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	23.9171	1	23.9171	0.2502*
Within Groups	9654.0635	101	95.5847	
Total	9677.9806	102		

*F = 0.2502 with 1 and 101 d.f. is not significant ($P > .05$).

TABLE IV
ANALYSIS OF VARIANCE FOR MEASURES OF PRIOR AND POST
ANXIETY IN THE EXPERIMENTAL GROUP

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	17.2940	1	17.2940	0.2113*
Within Groups	8181.8825	100	81.8188	
Total	8199.1765	101		

*F = 0.2113 with 1 and 100 d.f. is not significant ($P > .05$).

level of anxiety from prior to post measures of anxiety.

Comparison of prior and post control anxiety. If the treatment session was effective the control group may have had their anxiety raised by merely listening to the enactment of the role. However, just listening was not expected to cause a rise in anxiety level.

Table V (page 64) gives the summary analysis of variance for the prior and post measures of anxiety for the control group. It was substantiated that listening to the role-playing did not significantly raise the level of anxiety from prior to post measures.

Comparison of prior experimental and post control anxiety.

There was no significant difference between the experimental and control groups in prior anxiety. If listening to the role-playing session was ineffective, a comparison of prior experimental group anxiety and post control group anxiety should yield no significant differences.

Table VI (page 65) gives the summary analysis of variance for the prior experimental and the post control anxiety. It was substantiated that the prior experimental anxiety and post control anxiety were not significantly different.

Comparison of prior control and post experimental anxiety.

There was no significant difference between the experimental and control groups on prior anxiety. If role-playing was effective in raising the anxiety of the role-players, the post anxiety in the experimental group should have been significantly greater than that of the prior anxiety level of the control group.

TABLE V
ANALYSIS OF VARIANCE FOR MEASURES OF PRIOR AND
POST ANXIETY IN THE CONTROL GROUP

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	0.7788	1	0.7788	0.0090*
Within Groups	8803.7501	102	86.3112	
Total	8804.5289	103		

*F = 0.0090 with 1 and 102 d.f. is not significant ($P > .05$).

TABLE VI
ANALYSIS OF VARIANCE FOR MEASURES OF PRIOR EXPERIMENTAL
AND POST CONTROL ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	0.5065	1	0.5065	0.0060*
Within Groups	8501.3576	101	84.1718	
Total	8501.8641	102		

*F = 0.0060 with 1 and 101 d.f. is not significant ($P > .05$).

Table VII (page 67) gives the summary analysis of variance for the experimental post anxiety and control prior anxiety measures. It was not substantiated that the post anxiety of the experimental group was significantly higher than that of the prior anxiety level of the control group.

Comparison of final examination scores of experimental and control groups. It was expected that the role-playing group would be motivated to study harder due to their experimental treatment. Thus, it was expected that their final examination scores would be significantly higher than those of the control group. It was assumed that this would be the case because they would study harder and learn the material for the examination more fully.

Table VIII (page 68) gives the summary analysis of variance for final examination scores for the experimental and control groups. It was not substantiated that the experimental groups final examination scores were significantly higher than the control group's final examination scores.

Comparison of not answered scores on the final examination. It was expected that the experimental group, because of the higher level of anxiety created by the role-playing, would have studied harder and would have known the material more fully, and therefore would leave fewer of the questions unanswered. The subjects were penalized for incorrect answers which were presumed to be due to guessing.

Table IX (page 69) gives the summary analysis of variance for not answered scores for the experimental and control groups. It was

TABLE VIII

ANALYSIS OF VARIANCE FOR FINAL EXAMINATION SCORES
FOR THE EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	29.6941	1	29.6941	0.1721*
Within Groups	17423.9759	101	172.5146	
Total	17453.6700	102		

*F = 0.1721 with 1 and 101 d.f. is not significant ($P > .05$).

TABLE VII
ANALYSIS OF VARIANCE FOR MEASURES OF PRIOR CONTROL
AND POST EXPERIMENTAL ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	33.2784	1	33.2784	0.3961*
Within Groups	8484.2750	101	84.0027	
Total	8517.5534	102		

*F = 0.0060 with 1 and 101 d.f. is not significant ($P > .05$).

TABLE IX

ANALYSIS OF VARIANCE FOR NOT ANSWERED SCORES ON THE FINAL
EXAMINATION FOR EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	53.8418	1	53.8418	0.7509*
Within Groups	7241.7893	101	71.7008	
Total	7295.6311	102		

*F = 0.7509 with 1 and 101 d.f. is not significant ($P > .05$).

not substantiated that the number of unanswered questions on the final examination was significantly less than that of the control group.

Comparison of right answers on the final examination. If the experimental group was influenced to study more for the examination, it was expected that they would obtain more right answers on the examination.

Table X (page 71) gives the summary analysis of variance for right answers on the final examination for the experimental and control groups. It was not substantiated that the number of right answers on the final examination was significantly more for the experimental group than for the control group.

Comparison of wrong answers on the final examination. If the experimental group knew the examination material more thoroughly than the control group it was expected that they would have fewer wrong answers on the examination.

Table XI (page 72) gives the summary analysis of variance for wrong answers on the final examination for the experimental and control groups. It was not substantiated that the number of wrong answers on the final examination was significantly less for the experimental group than for the control group.

II. SUMMARY OF RESULTS OF ANALYSIS OF VARIANCE FOR ROLE-PLAYERS AND LISTENERS

From an overall point-of-view it appeared that role-playing and listening to the role-playing session had no significant effect on

TABLE X
ANALYSIS OF VARIANCE FOR RIGHT ANSWERS ON THE FINAL
EXAMINATION FOR EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	22.9722	1	22.9722	0.2587*
Within Groups	8966.7366	101	88.7795	
Total	8989.7088	102		

*F = 0.2587 with 1 and 101 d.f. is not significant ($P > .05$).

TABLE XI

ANALYSIS OF VARIANCE FOR WRONG ANSWERS ON THE FINAL
EXAMINATION FOR EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	7.3403	1	7.3403	0.2586*
Within Groups	2866.4073	101	28.3802	
Total	2873.7476	102		

*F = 0.2586 with 1 and 101 d.f. is not significant ($P > .05$).

anxiety and examination grades.

The following were the results of the analyses of variances:

1. It was substantiated that the experimental and control groups were not significantly different before treatment.
2. It was not substantiated that the role-playing raised the level of anxiety of the role-players significantly more than that of the listeners.
3. It was not substantiated that the role-playing significantly raised the level of anxiety from prior to post measures.
4. It was substantiated that listening to the role-playing did not significantly raise the level of anxiety from prior to post measures.
5. It was substantiated that the prior experimental anxiety and the post control anxiety were not significantly different.
6. It was not substantiated that the post anxiety of the experimental group was significantly higher than that of the prior anxiety level of the control group.
7. It was not substantiated that the experimental group's final examination scores were significantly higher than the control group's final examination scores.
8. It was not substantiated that the number of unanswered questions on the final examination was significantly less than that of the control group.
9. It was not substantiated that the number of right answers on the final examination was significantly more for the

experimental group than for the control group.

10. It was not substantiated that the number of wrong answers on the final examination was significantly less for the experimental group than for the control group.

III. DISCUSSION

It was not substantiated that role-playing had a significant effect on increasing anxiety or improving grades. With the view in mind that the treatment session as a whole may have shown a tendency or significant result, all the data was grouped and an analysis of variance computed.

If the treatment session was effective in increasing anxiety, regardless of whether the subjects were role-players or listeners, the post measures of anxiety for the total group should have been significantly higher than that of the prior measures of anxiety.

It was with this idea in mind that the experimental and control groups' data were grouped and an analysis of variance was computed to determine if there was a difference between prior and post measures of anxiety.

Comparison of grouped prior and post measures of anxiety. If the treatment session was effective, regardless of whether the subjects were in the experimental or control group, the post measures of anxiety would have been higher than prior measures.

Table XII (page 76) gives the summary analysis of variance for grouped prior and post measures of anxiety. It was not substantiated that the treatment session was effective in raising the level of anxiety from prior to post measures of anxiety when all the data was grouped.

Summary of results for total grouped scores. It appeared that the treatment session had no significant effect on anxiety.

The following is the result of the analysis of variance:

1. It was not substantiated that the treatment session was effective in raising the level of anxiety from prior to post measures of anxiety when all the data was grouped.

Increase, decrease and same grouping. The treatment session was viewed as possibly having a different effect on individual subjects. For example, a listener may have responded with significantly greater anxiety to the treatment session than a role-player. For some of the subjects, the role-playing or listening may have had no effect on their anxiety level. For some other subjects the treatment may have significantly decreased their anxiety.

To determine if there was any significant difference between these three types, all the subjects regardless of whether they were in the experimental or control groups were grouped into three categories. Those who decreased were grouped. Those who remained the same were grouped together. An analysis of variance across the three groups was computed.

It was assumed that if the three groups were not significantly different before the treatment session, and then significantly different

TABLE XII
ANALYSIS OF VARIANCE FOR GROUPED PRIOR AND POST
MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	10.2718	1	10.2718	0.1223*
Within Groups	17125.4758	204	83.9484	
Total	17135.7476	205		

*F = 0.1223 with 1 and 204 d.f. is not significant ($P > .05$).

after the treatment session, it could be said that the treatment session may have been effective, but that it affected the subjects according to their individual reactions to the session.

Comparison of prior measures of anxiety. If the prior measures of anxiety were not significantly different, and if the post measures of anxiety were different, then there was evidence that the treatment may have been effective.

Table XIII (page 78) gives the summary analysis of variance for the prior measures of anxiety for the three groups, those who increased in anxiety, those who decreased, and those who remained the same. It was substantiated that the prior levels of anxiety in the three groups were not significantly different.

Comparison of post measures of anxiety. If the post measures of anxiety were significantly different, then there was some evidence to support the assumption that the treatment may have had an effect, but with different effects on subjects.

Table XIV (page 79) gives the summary analysis of variance for the post measures of anxiety for the three groups. It was substantiated that post measures of anxiety were significantly different between the three groups.

Comparison of final examination scores of the three groups. If the treatment session was effective and resulted in a difference in anxiety level, and motivated those higher in anxiety to study harder, a difference in final examination scores was expected.

TABLE XIII

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
ANXIETY GROUPS ON PRIOR MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	258.5059	2	129.2529	1.8267*
Within Groups	7075.5912	100	70.7559	
Total	7334.0971	102		

*F = 1.8267 with 2 and 100 d.f. is not significant ($P > .05$).

TABLE XIV

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
ANXIETY GROUPS ON POST MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	2205.6326	2	1102.8163	14.7586*
Within Groups	7472.3480	100	74.7234	
Total	9677.9806	102		

*F = 14.7586 with 2 and 100 d.f. is significant ($P < .01$).

Table XV (page 81) gives the summary analysis of variance for the final examination scores for the three groups. It was not substantiated that there was a significant difference on the final examination scores between the three groups.

Comparison of not answered scores on the final examination. It was assumed that there would be a difference in not answered scores between the three groups. With the view that those who increased in anxiety would study harder, it was expected that they would know the material more fully than the other groups and thus would leave fewer unanswered questions. The opposite was expected with the other two groups.

Table XVI (page 82) gives the summary analysis of variance for the not answered scores on the final examination. It was not substantiated that there was a significant difference in the not answered scores between the three groups.

Comparison of right answers on the final examination. It was assumed that there would be a difference between the three groups in the number of right answers on the final examination. Because of the differences in anxiety it was thought that those high in anxiety would study harder, know the material well, and score more right answers on the final examination. The opposite was expected with the other two groups.

Table XVII (page 83) gives the summary analysis of variance for the right answered scores on the final examination. It was not substantiated that there was a significant difference in the right answered

TABLE XV

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
ANXIETY GROUPS ON FINAL EXAMINATION SCORES

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	82.5697	2	41.2848	0.2495*
Within Groups	16545.5274	100	165.4552	
Total	16628.0971	102		

*F = 0.2495 with 2 and 100 d.f. is not significant ($P > .05$).

TABLE XVI

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
ANXIETY GROUPS ON NOT ANSWERED SCORES
ON THE FINAL EXAMINATION

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	303.1789	2	151.5894	2.1679*
Within Groups	6992.4522	100	69.9245	
Total	7295.6311	102		

*F = 2.1679 with 2 and 100 d.f. is not significant ($P > .05$).

TABLE XVII

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
 ANXIETY GROUPS ON RIGHT ANSWERED SCORES
 ON THE FINAL EXAMINATION

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	48.2748	2	24.1374	0.2699*
Within Groups	8941.4340	100	89.4143	
Total	8989.7088	102		

*F = 0.2699 with 2 and 100 d.f. is not significant ($P > .05$).

scores between the three groups.

Comparison of wrong answers on the final examination. It was assumed that there would be a difference between the three groups in the number of wrong answers on the final examination. Because of the differences in anxiety it was assumed that those low in anxiety would study less and score more wrong answers on the final examination than those higher in anxiety.

Table XVIII (page 85) gives the summary analysis of variance for the wrong answered scores on the final examination. It was not substantiated that there was a significant difference in the wrong answers scored between the three groups.

Summary of the results of the three groupings. The treatment session was viewed as possibly having had different effects on the subjects, with some increasing, some decreasing, and some remaining the same in anxiety from prior to post measures. All subjects were categorized according to the above mentioned criterion.

The following were the results of the analysis of variance:

1. It was substantiated that prior levels of anxiety in the three groups were not significantly different.
2. It was substantiated that post measures of anxiety were significantly different between the three groups.
3. It was not substantiated that there was a significant difference on the final examination scores between the three groups.

TABLE XVIII

ANALYSIS OF VARIANCE FOR INCREASED, DECREASED, AND SAME
 ANXIETY GROUPS ON WRONG ANSWERED SCORES
 ON THE FINAL EXAMINATION

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	75.2275	2	37.6137	1.3440*
Within Groups	2798.5201	100	27.9852	
Total	2873.7476	102		

*F = 1.3440 with 2 and 100 d.f. is not significant ($P > .05$).

4. It was not substantiated that there was a significant difference in the not answered scores between the three groups.
5. It was not substantiated that there was a significant difference in the right answered scores between the three groups.
6. It was not substantiated that there was a significant difference in the wrong answered scores between the three groups.

The conclusions that were derived from the results of the data, grouped according to those subjects who increased, decreased and remained the same, were that the treatment session as a whole appeared to have had a different effect on the subjects. Namely, the treatment session appeared to increase some subjects anxiety, had no effect on some, and decreased the anxiety of others.

There was no significant difference on examination scores.

Grouped data comparing anxiety increase and anxiety decrease groups. An analysis of variance was calculated to compare the increase in anxiety group with the decrease in anxiety group. The results of those calculations are contained in the appendix (see Appendix G).

Those who increased in anxiety after the treatment session had significantly fewer not answered scores on the examination ($P < .05$). The result supported the assumption that those who increased in anxiety studied harder and consequently had more confidence and left fewer

unanswered questions on the examination.

Explanation of no other differences in final examination scores.

A study guide based on the final examination was given to all subjects after the treatment session. It appeared that the study guide may have been effective and aided all subjects to score fairly well. Thus, the results on the examination may have been clouded for any specific group. However, because one group studied harder and had more confidence, they left fewer unanswered scores.

To further explore the variables involved in the outcome of the study, a third group, untreated, may prove beneficial to the clarification of the results. Also more significant results may be shown if subjects are used who are in danger of academic dismissal. If a study guide is not used a greater distinction between the groups may be found. Other variations on the study are the use of all low anxious subjects or all high anxious subjects, or low anxious in one group and high anxious in another.

IV. SUMMARY OF CHAPTER

The data was analyzed, with an Olivetti Underwood Programma 101 computer, using the statistical technique known as the simple analysis of variance to compare means. The analysis of the data was approached in several ways.

First, an analysis of variance was computed following the basic hypotheses of the study that there was a difference in anxiety levels

after treatment for experimental and control groups, and better examination performance for the role-players as opposed to the listeners, the results of the analyses of variances for the experimental and control groups yielded no significant differences in anxiety or examination scores.

Secondly, the total group of subjects, role-players and listeners grouped together, were compared on prior treatment and post treatment anxiety to determine whether or not the total treatment session had any effect on raising the anxiety of the subjects. The results of the analysis of variance for the total group of subjects yielded no differences in prior and post scores of anxiety.

Third, the total group of subjects were compared after they were categorized into those who increased in anxiety from prior to post measures, those who decreased, and those who remained the same. This grouping was made, on the basis of the assumption that the treatment session may have affected the subjects in different ways. The results of the analyses of variance indicated that there was no significant differences between the three groups on prior measures of anxiety, but that there was on post measures of anxiety. These significant differences between prior and post measures of anxiety may have been a result of the treatment session and a differential effect on the subjects. However, there were no significant differences in examination scores.

Fourth, a comparison was made between all those subjects who increased in anxiety from prior to post measures, and all those subjects who decreased. One significant result of the calculations was a

significant difference between the two groups on the number of not answered scores on the examination. Those who increased in anxiety after the treatment session had significantly fewer not answered scores on the examination. The result supported the view that those who increased in anxiety studied harder and had more confidence, and thus left fewer unanswered questions on the examination.

An explanation was given for there being no significant differences in the other examination scores. It appeared that the study guide that was given to all the subjects may have been quite effective and appeared to have aided all subjects to score somewhat equally well on the examination. Thus, the results on the examination may have been clouded for any specific group. However, because one group studied harder and had more confidence, they left fewer not answered scores.

The recommendation was made for further study using a third untreated group. The non-use of a study guide was also suggested. Other variations were suggested, such as using all low anxious subjects, all high anxious subjects, or low and high groups.

CHAPTER V

SUMMARY AND CONCLUSIONS

A summary of the study and the previous four chapters, and the general conclusions arrived at have been encompassed in this chapter.

I. SUMMARY

Chapter one contained the problem and definition of the terms used. This study was based on the assumption that role-playing changed attitudes and behavior. The statement of the problem was: In what way did emotional role-playing modify student attitudes and behavior toward studying? The hypothesis stated that role-playing raised anxiety and positively affected attitudes and behavior toward studying. The null form of the hypothesis stated that there were no significant differences after treatment. The purpose of the study was to compare the effects on studying of a communication by role-playing as opposed to listening. The significance of the study was that role-playing may be a potent technique which can be used to modify study attitudes and behavior of students in the desired direction. The limitations of the study were restricted to the effects of role-playing and listening on students for

a limited period of time. No generalizations were made to the larger population or students at other institutions.

Chapter two contained a review of the literature and related research which directly pertained to this study. In this chapter were summarized more than twenty experiments which supported the contention that role-playing did have a statistically significant effect in changing attitudes and behavior. The basic paradigm and assumptions for the present study were derived from all the studies that were reviewed. Three studies which were of particular importance in formulating the assumptions on which this study was based were ones by Janis and Mann¹, Mann and Janis², and Mann³. These experimenters had significant results when using emotional role-playing as a method of changing habits and attitudes.

Chapter three contained the methods and procedures used in this study. The main steps in the administration of the study were as follows:

1. A week before the treatment of the experimental and control groups an anxiety scale was administered (see Appendix B).

¹Irving L. Janis and Leon Mann, "Effectiveness of Emotional Role-playing in Modifying Smoking Habits and Attitudes," Journal of Experimental Research in Personality, 1965, 1 (2), pp. 84-90.

²Leon Mann and Irving L. Janis, "A Follow-up Study on Long-term Effects of Emotional Role-playing," Journal of Personality and Social Psychology, 1968, 8 (4, Part 1), pp. 339-342.

³Leon Mann, "The Effects of Emotional Role-playing on Desire to Modify Smoking Habits," Journal of Experimental Social Psychology, 1967, 3 (4), pp. 334-348.

2. The subjects in the experimental and control groups were assigned and equated on the basis of similar prior scores on the Taylor Manifest Anxiety scale.⁴
3. Members of the control and experimental groups were paired and faced each other.
4. Members of the experimental group were required to read a prepared script (see Appendix A) aloud three times with feeling, and to place themselves in the position of someone who was being academically dismissed.
5. Members of the control group were required to listen three times to the enactment of the role-playing session.
6. Immediately after the treatment to the experimental and control groups, the subjects again completed the Taylor Manifest Anxiety scale (see Appendix B).
7. At the end of the classroom session it was announced to both groups that a week from that time a test in the course would be given (see Appendix D). Then, study guides were distributed to direct their studying (see Appendix C).

The design of the study was standard for psychological experiments, with before and after measurements, a treatment session, and control and experimental groups.⁵ The subjects were sophomores enrolled

⁴Janet A. Taylor, "A Personality Scale of Manifest Anxiety," Journal of Abnormal and Social Psychology, 1953, 48 (2), pp. 61-64.

⁵F. J. McGuigan, Experimental Psychology (Englewood Cliffs, New Jersey: 1960), pp. 1-14.

in a psychology course at Kansas State Teachers College. The experimental procedures involved prior measures of anxiety, role-players and listeners who used a script concerned with academic failure, post measures of anxiety, and measures of scores on a midterm examination to test the effect that role-playing had on studying. The role-playing script rationale and the test of anxiety used were based on the assumptions that role-playing raised manifest anxiety and caused attitude and behavior change toward studying. The groups were compared in a variety of ways through the use of the analysis of variance technique. The uses and bases of the analysis of variance technique were discussed. The rationale and use of the F test were discussed. Finally, in chapter three a brief defense of the statistical techniques used was presented.

II. CONCLUSIONS

A number of analyses of variance were computed following the basic hypothesis of the study that there was a difference in anxiety levels after treatment for experimental and control groups, and better test performance for role-players as opposed to listeners.

The results of the analyses of variances for the experimental and control groups yielded no significant differences in anxiety or examination scores. The null hypothesis was not rejected.

The total group of subjects, role-players and listeners grouped together, was compared on prior and post anxiety to determine whether

or not the total treatment session had any effect on raising the anxiety of the subjects.

The results of the analysis of variance for the total group of subjects yielded no differences in prior and post scores of anxiety.

The total group of subjects was compared after they were categorized into those who increased in anxiety from prior to post measures, those who decreased, and those who remained the same. This grouping was made, based on the assumption that the treatment session may have affected the subjects in different ways.

The results of the analysis of variance showed that there were no significant differences between the three groups on prior measures of anxiety, but that there were significant differences on post measures of anxiety. These significant differences between prior and post measures of anxiety may have been a result of the treatment session and a differential effect on the subjects. However, there were no significant differences in examination scores.

Next, a comparison was made between all those subjects who increased in anxiety from prior to post measures, and all those subjects who decreased.

One significant result of these calculations was that there was a significant difference between the two groups on the number of not answered scores on the examination. Those who increased in anxiety after the treatment session, had significantly fewer not answered scores on the examination. This result supported the view that those who increased in anxiety studied harder and had more confidence, and thus left

fewer unanswered questions on the examination.

An explanation for there being no significant differences in the other examination scores was that the study guide which was given to all the subjects may have been quite effective and allowed all the subjects to score somewhat equally well on the examination. Thus, the results on the examination may have been clouded for any specific group. However, because one group studied harder and had more confidence, they left fewer not answered scores.

A recommendation was made for further study using a third untreated group. The non-use of a study guide was also suggested. Other variations were suggested, such as using all low anxious subjects, all high anxious subjects, or a low group and a high group.

In any case, the results appear to warrant a further study because there were no significant differences between the experimental and control groups after the treatment session. There is a possibility that the reason for no differences was in the type of listeners used and the environment and circumstances of the treatment session. It is recommended that a similar study be conducted with individual treatment sessions and listeners of high status.⁶

⁶Nancy E. Streltzer and Glen V. Koch, "Influence of Emotional Role-playing on Smoking Habits and Attitudes," Psychological Report, 1968, 22 (3, Part 1), pp. 817-820.

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APPENDICES

APPENDIX A

SCRIPT

Role players, please read the following script to your partners. Read it twice, the first time read it aloud to your partner to familiarize yourself with the script. Read it a second time aloud to your partner, but this time place yourself in the position of the person who has flunked out. Actually feel and experience the script. For the brief moment, actually be a student who has flunked out.

When the dean called me to his office I was just sick to my stomach. I felt a burning sensation and uneasiness as though I had the runs. The strain was just terrible and I was worried about what the dean had to say to me. I knew my grades were low and I feared what he had to say to me--that I had flunked out. As I reached for the door handle to his office I could feel the sweat on my palms and beads running down my face and under my arms. My heart started pounding and my breath came in gasps as I turned the handle and stepped into his office. Damn, I was so embarrassed.

All I remember about our conversation was the dean saying that I had flunked out. At that point all I could think of was the reaction my family and friends would have. My friends? I'll miss them the most when I leave. We'll be on different paths now.

Lately I haven't been able to sleep very well, and I've had nightmares that you wouldn't believe. I can hardly sit down because I'm so restless and nervous. I'm always so tired and feel that something terrible is about to happen. Everything is such a strain for me anymore. I'm constantly worrying about things all the time. The least little thing makes me so damn upset. I fall apart and feel like crying when the least thing goes wrong.

I keep on thinking if I had just passed that last test with a high score everything would be great just now. I should have done all the readings, used the study guides in that course, and drilled myself in the material so that I would have known the answers thoroughly and would have been able to bring the answers to mind quickly.

If I had it to do over again I would have studied my hardest for that test, and I would have gotten a good grade. If I had another chance, damn it, I'd really study hard.

APPENDIX B

APPENDIX B

BIOGRAPHICAL INVENTORY

NAME _____ NUMBER _____ DATE _____

Please answer the following questions either true (T) or false (F) as they apply to you.

1. I am often sick to my stomach.....()
2. I am about as nervous as other people.....()
3. I work under a great deal of strain.....()
4. I blush as often as others.....()
5. I have diarrhea ("the runs") once a month or more.....()
6. I worry quite a bit over possible troubles.....()
7. When embarrassed I often break out in a sweat which is very
annoying.....()
8. I do not often notice my heart pounding and I am seldom short
of breath.....()
9. Often my bowels don't move for several days at a time.....()
10. At times I lose sleep over worry.....()
11. My sleep is restless and disturbed.....()
12. I often dream about things I don't like to tell other people...()
13. My feelings are hurt easier than most people.....()
14. I often find myself worrying about something.....()
15. I wish I could be as happy as others.....()
16. I feel anxious about something or someone almost all the time..()
17. At times I am so restless that I cannot sit in a chair very
long.....()
18. I have often felt that I faced so many difficulties I could
not overcome them.....()
19. At times I have been worried beyond reason about something that
really did not matter.....()
20. I do not have as many fears as my friends.....()
21. I am more self-conscious than most people.....()
22. I am the kind of person who takes things hard.....()
23. I am a very nervous person.....()
24. Life is often a strain for me.....()
25. I am very confident of myself.....()
26. I am not at all confident of myself.....()
27. I do not tire quickly.....()
28. At times I feel that I am going to crack up.....()
29. I don't like to face a difficulty or make an important
decision.....()
30. I have very few headaches.....()
31. I cannot keep my mind on one thing.....()

32. I worry over money and business.....()
33. I frequently notice my hand shakes when I try to do something..()
34. I practically never blush.....()
35. I am often afraid that I am going to blush.....()
36. I have nightmares every few nights.....()
37. My hands and feet are usually warm enough.....()
38. I sweat very easily even on cool days.....()
39. I feel hungry almost all the time.....()
40. I have a great deal of stomach trouble.....()
41. I am easily embarrassed.....()
42. I am usually calm and not easily upset.....()
43. I cry easily.....()
44. I am happy most of the time.....()
45. It makes me nervous to have to wait.....()
46. Sometimes I become so excited that I find it hard to go to
sleep.....()
47. I have been afraid of things or people that I know could not
hurt me.....()
48. I certainly feel useless at times.....()
49. I find it hard to keep my mind on a task or job.....()
50. At times I think I am no good at all.....()

APPENDIX C

APPENDIX C

STUDY GUIDE

C. A. JOSEPH

STUDY GUIDE FOR PY 231

1. Total # of questions: 85 True or False.
2. Scored: Number right minus the number wrong. Therefore, don't guess. You would be better off to leave a question unanswered rather than to mark it wrongly.
3. Handout: What is Marijuana? 6 questions from it are on the test.
4. Chapter 1 and glossary; 16 questions. Read Chapter 1 thoroughly.
5. Handout: Why they do it.
6. Chapter 2; Summary and Glossary 3 questions
7. Handout: Lonely People, 1 question
8. Handout: Guy in the Glass, 1 question
9. Chapter 3; Summary and Glossary 2 questions
10. Handout: Drugs (What is the history? Etc.) 14 questions
11. Chapter 4; Summary and Glossary 3 questions
12. Handout: Sources and Publications MH, 1 question
13. Chapter 5; Summary and Glossary 2 questions
14. Handout: The Adjustment Process and Defense Mech., 13 questions
15. Chapter 6; Summary and Glossary 1 question
16. Handout: 1958 Fact Sheet, 3 questions, emphasis on the first page
17. Handout: Everybodys Business 1 question
18. Handout: Characteristics of Good Health, 1 question
19. Handouts Summary Chart of Functional Psychoses and Handout on Psychoneurotic Disorders, 12 questions
20. No questions were taken directly from Chapters 7 and 8 but as an aid to understanding the handouts you should read them.
21. You should know thoroughly those handouts and chapters from which many questions are asked.
22. Know the definitions from the glossarys.
23. You should spend more time on those areas that are heavily weighted with questions.
24. There are 85 true-false questions to complete in less than a class period so you should be quite familiar with the material.

APPENDIX D

APPENDIX D

EXAMINATION

PY 321

C. A. Joseph

PLEASE DO NOT MARK ON THE QUESTION SHEETS. Place your name, student number, test number, and class hour on the answer sheet. The following questions should be marked true or false. Don't guess! The test will be scored with the number of questions right minus the number wrong. You will be better off leaving a questions unanswered if you are not fairly sure of the right answer. Good Luck!

1. The Indian hemp plant, cannabis sativa, also known as Mary Jane, is usually used by injecting it into the blood stream.
2. A person using marijuana finds it harder to make decisions.
3. Authorities now think in terms of drug "addiction" rather than "dependence" when referring to marijuana.
4. The effects of marijuana vary widely, depending on the amount and strength of the marijuana used.
5. Usually the drug (marijuana) is felt slowly and the effects last only about five minutes.
6. Scientists agree that, without a doubt, the effects of marijuana are extremely detrimental to the body.
7. Guy L. Roberts, the author of the textbook, states that man knows that much is wrong with his society and himself and that the knowledge of his own being and its application in controlled behavior is now adequate. Now man is not afraid.
8. Roberts states that man is now ready for the responsibility in using the power he already possesses and the power he will attain.
9. At least one person in every ten has some form of mental or emotional illness (from mild to severe) that needs psychiatric treatment.

10. There has been an increase in the number of cases admitted to mental hospitals for treatment, but a decrease in the number who remain there for an extended period.
11. The clinical method studies the individual in his social environment and probes for the dynamic factors and their interrelationships which combine to cause the behavior symptoms.
12. Objectivity and control are not as important as subjectivity in the experimental method.
13. Mental hygiene is generally concerned with the whole person, rather than just the mental aspect, because the whole person is involved in healthful or unhealthful performance.
14. The public attitude toward mental illness had not changed greatly during this century. Persons so affected are still generally known as the insane, the crazy, the mad, the demon possessed; they are generally not viewed as sick people.
15. One characteristic of the mental healthy, according to Jahoda, who was mentioned in the book, is that they can act on the environment as well as merely react to it.
16. The function of mental hygiene is both prophylactic and meliorative.
17. Subjective experience rather than values and the self-image are emphasized by Phenomenologists and Existential Psychologists.
18. A number of existentialism-oriented psychologists have formed the American Association of Humanistic Psychology. Their objective is to correct the mistaken self psychologists and to bolster the position of the behavioristic school.
19. Anomie means a general state of confused or lack of values and goals.
20. Existentialism is a philosophical frame of reference that starts on the base line of being (existence) and experience, of which rational thinking is only a part. This it finds valid in elements of experience beyond the strictly logical, emphasizing "will," values, etc.
21. Phenomenology is a psychological point of view that approaches the study of behavior from the position of the behavior; describing the phenomena of experience as the subject perceives them.
22. Psychotherapy is the treatment of psychological disorders; chiefly by the use of prescribed medicines.

23. Psychosomatic is a type of illness in which the psychological impairment is chiefly caused by an organic or physiological defect.
24. The essay entitled "Why They Do It" by a 21-year old graduate of an Ivy League college, Andrew Garvin, viewed the smoking of pot as something wrong to do.
25. The previous mentioned article portrayed the nation as degenerating by the use of marijuana.
26. Guy L. Roberts' belief is that personality is an interpersonal development and dynamic rather than static.
27. Roberts views the autonomous, truly healthy-minded person as having a flexible, complex personality which is capable of forming many richly satisfying interpersonal relationships.
28. Nomothetic means the study of general traits rather than particulars and significant individual characteristics.
29. Did you read the hand-out "How To Break Out Of Being One Of The Lonely People"?
30. The basic theme of the poem "The Guy In The Glass" is that an individual should judge himself according to the opinions that the world and other people have of him.
31. Roberts suggested that man's potential capacity for transcendent and creative living is so great that he fears the responsibility it entails and thus he represses awareness of his high potentiality.
32. The term "homunculus" is derived from "small man", midget, or dwarf and from the concept of a minute body contained in the spermatozoan or ovum.
33. Use of drugs is called drug abuse.
34. The term drug dependence is recognized as a substitute for drug habituation and drug addiction.
35. Drug dependence is a state of periodic or chronic intoxication produced by the repeated consumption of a drug.
36. According to the homeostasis theory, tolerance and withdrawal illness are both related to the action of the internal forces which try to keep the body's metabolic processes out of balance.
37. Alcohol is a stimulant.

38. Alcoholism is an acute, nonprogressive disease.
39. Tobacco is a depressant although its first effect on the nervous system is stimulating.
40. Amphetamines or Benzedrinelike drugs ("pep pills," "Bennies" or "Speed") are commonly used stimulants.
41. Students often successfully use the previously mentioned pills because they improve performance when the student is exhausted.
42. Barbiturates are drugs which are depressants to the central nervous system, and are best known as sleeping pills.
43. Barbiturates are not medically useful and are not to be used for the relief of nervousness, tension, anxiety, and pain.
44. Medically, a narcotic is a drug that induces profound lethargy and relief of pain.
45. Legally, the term narcotic usually includes cocaine; a powerful stimulant.
46. LSD, lysergic acid diethylamide, is produced from the fungus which grows on rye.
47. STP is an untested drug which is less effective than LSD and is injected directly into the blood stream.
48. Hedonism is the theory or doctrine that pleasure is the abnormal or unnatural goal of motivated behavior.
49. Holistic means a systematic study of the whole configuration; the view of man as a unified psychobiologic organism functioning as a whole.
50. Homeostasis is the body's automatic effort to maintain tension and general state of disequilibrium among the vital processes.
51. You were given a handout on sources of Publications on Mental Health.
52. Idiographic means the mode of personality study that emphasizes common traits and statistical norms.
53. Telism holds that the self is the only truly existent thing and that all reality is subjective.

54. Defense mechanisms, which are also called adjustment mechanisms, are unconscious processes all people use to varying degrees in attempting to maintain their self-respect, prestige, and sense of security when they meet obstacles and difficulties they cannot overcome.
55. These defense mechanisms are acquired late in life; often in adulthood.
56. Since everyone at times experiences thwarting of some basic need or desire, adjustment mechanisms should be considered normal and necessary.
57. When defense mechanisms are utilized excessively they may be symptoms of abnormal or disturbed behavior.
58. Compensation is the mechanism in which emotional conflicts gain external expression through motor, sensory, or somatic manifestations.
59. Denial is the process whereby an individual avoids painful or anxiety-producing reality by unconsciously denying that it exists.
60. Having been berated by the employer but afraid to respond, the father overly criticizes his wife or child for a minor mistake is an example of dissociation.
61. An orphan relates long and varied tales of his father's marvelous deeds and his many, many possessions is an example of projection.
62. The person takes satisfaction from the accomplishments of other people in the absence of one's own achievement is called identification.
63. Rationalization is the mechanism through which an individual justifies inconsistent or undesirable behavior, beliefs, and motivations by providing acceptable explanations for them.
64. The dominant-rejectant mother who over protects her child is an example of reaction formation.
65. The mechanism whereby the individual returns to an earlier and less mature level of adaptation is regression.
66. The process by which unconscious and unacceptable desires are channeled into activities that have a strong social approval is called repression.

67. Autism means a substitute; one who plays the role of another.
68. One person in every ten has some form of mental or emotional illness (from mild to severe) that needs psychiatric treatment.
69. There are more people in hospitals with mental illness than with all other diseases combined, including cancer and heart disease.
70. Fewer than 3 out of 10 patients admitted to a mental hospital can leave partially or totally recovered.
71. You were given a handout titled "Everybody's Business" by Menninger.
72. A characteristic of good mental health is that a person does not push people around, nor does the person allow himself to be pushed around.
73. The psychotic disorder's chief characteristic is anxiety felt or unconsciously controlled by use of various psychological defense mechanisms.
74. In psychoneurotic disorders, there is no gross disorganization of personality or loss of contact with reality.
75. The major symptoms of the anxiety reaction are feelings of weakness, fatigue, lack of enthusiasm, and somatic complaints.
76. The hypochondriacal reaction major symptoms are obsessive concern about state of health, accompanied by multiplicity of somatic complaints.
77. Getting sick to escape from anxiety-arousing stress is the basic dynamics involved in the dissociative reaction.
78. The basic dynamics involved in the phobic reaction are "free-floating" anxiety usually punctuated by acute attacks.
79. The major symptoms of the neurotic-depressive reactions are persistent thoughts or impulses which the individual realizes are irrational but which he cannot avoid.
80. The major symptoms of the asthenic reaction are amnesia, fugue, multiple personality, and somnambulism.
81. The psychodynamics involved in the simple schizophrenic reaction are simple retreat from anxiety-arousing stress to lower level of psychobiological functioning involving emotional indifference and lowered aspiration.

82. The general symptoms of the hebephrenic reaction are shallow, inappropriate emotional responses, silliness, mannerisms, bizarre delusions, stereotypies, unpredictable hollow giggling.
83. The psychodynamics involved in the paranoid schizophrenic reaction are lag in biological development interfering with normal psychological development and/or "frosting" of mother-child relationship.
84. The general symptoms of paranoia are systematized delusions and/or grandeur with the rest of personality remaining relatively intact.
85. The involitional psychotic reaction is expressed in depression usually with agitation and is an overreaction to feelings of failure to achieve goals and approaching old age with no hope of future attainment.

APPENDIX E

APPENDIX E

RAW DATA

RAW SCORES FOR THE EXPERIMENTAL GROUP N=51

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
1.F	12	15	71	7	61	7
2.M	31	41	59	14	45	12
3.F	16	18	59	9	50	17
4.M	15	17	59	16	43	10
5.M	15	21	70	11	59	4
6.F	20	30	73	0	73	12
7.F	28	29	54	16	38	15
8.F	23	24	68	11	57	6
9.F	17	25	58	14	44	13
10.F	21	24	62	18	44	5
11.M	15	16	78	5	73	2
12.F	13	16	57	17	42	9
13.F	19	20	70	6	64	9
14.M	22	16	66	15	51	4
15.F	44	42	71	2	69	12
16.M	24	23	71	7	64	7
17.M	20	17	67	11	56	7
18.F	21	16	79	1	78	5
19.M	24	22	55	16	39	14
20.F	31	29	60	23	37	22

Appendix E (continued)

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
21.F	32	26	60	14	46	11
22.F	22	19	58	6	52	21
23.F	19	16	78	2	76	5
24.F	25	23	74	2	72	9
25.F	20	20	51	3	48	31
26.M	17	17	45	5	40	40
27.F	37	37	74	5	69	6
28.M	9	14	76	3	73	6
29.M	13	5	76	6	70	3
30.M	16	14	68	4	64	13
31.F	14	13	57	11	46	17
32.F	12	10	64	12	52	9
33.F	7	0	36	5	31	44
34.F	9	7	68	17	51	0
35.F	10	9	72	8	64	5
36.F	15	11	47	10	37	28
37.M	7	4	64	13	51	8
38.M	12	5	61	22	39	22
39.M	13	12	74	7	67	4
40.M	12	9	64	14	50	7
41.M	9	6	54	11	43	20
42.M	6	4	79	6	73	0
43.M	16	10	52	3	49	30
44.M	12	10	56	7	49	22
45.F	9	8	62	14	48	9

Appendix E (continued)

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
46.F	8	3	64	11	53	10
47.M	7	6	57	18	39	10
48.M	5	3	63	9	54	13
49.M	7	7	64	14	50	7
50.M	11	11	65	7	58	13
51.F	10	10	68	10	58	7
	= 16.7058	= 15.8823	= 63.8823	= 9.7647	= 54.1568	= 12.1960

*M = Male, F = Female

Appendix E (continued)

RAW SCORES FOR THE CONTROL GROUP N=52

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
1.M*	15	19	57	15	52	3
2.M	19	20	65	10	55	10
3.F	20	21	59	18	41	8
4.F	23	25	72	4	68	9
5.M	19	24	57	16	41	12
6.M	23	33	46	15	31	24
7.M	22	23	53	10	43	12
8.M	28	30	57	13	43	15
9.F	35	36	60	13	47	12
10.M	23	28	71	11	60	3
11.M	15	18	59	14	45	12
12.M	12	19	64	12	52	9
13.M	16	26	76	3	73	6
14.M	24	25	75	7	68	3
15.M	18	20	62	10	52	13
16.F	36	40	74	7	67	4
17.M	23	21	64	4	60	17
18.M	40	37	63	13	50	9
19.F	28	28	58	11	47	16
20.F	40	40	83	2	81	0
21.M	28	28	71	2	69	12
22.F	12	15	73	7	66	5
23.F	12	13	72	0	72	13

Appendix E (continued)

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
24.F	9	11	77	7	70	1
25.F	11	15	60	19	41	6
26.M	6	9	76	6	70	3
27.M	9	10	66	8	58	11
28.F	6	13	58	7	51	20
29.M	5	1	60	15	45	10
30.M	7	2	60	12	48	13
31.M	8	3	51	12	39	22
32.F	9	7	76	7	69	2
33.F	18	16	62	19	43	4
34.F	17	10	73	9	64	3
35.M	10	6	58	7	51	20
36.F	13	11	62	16	46	7
37.M	17	16	64	8	56	13
38.F	16	13	75	3	72	7
39.M	16	10	54	9	45	22
40.M	25	16	42	14	28	29
41.F	17	7	79	2	77	4
42.F	9	8	68	6	62	11
43.M	9	5	56	11	44	18
44.M	11	9	53	16	37	16
45.F	15	13	65	3	62	17
46.F	12	9	64	5	59	16

Appendix E (continued)

Subject	Prior Measure of Anxiety	Post Measure of Anxiety	Number of Right Scores on Exam	Number of Wrong Scores on Exam	Final Score	Not Answered Scores
47.F	20	16	74	4	70	7
48.F	16	11	49	4	45	32
49.F	7	4	84	1	83	0
50.M	21	15	73	12	61	0
51.M	14	14	76	5	71	4
52.F	7	7	55	16	39	14
	= 17.1153	= 16.8461	= 64.8269	= 9.2307	= 55.2307	= 10.7500

*M = Male, F = Female

APPENDIX F

APPENDIX F

INSTRUCTIONS TO ROLE-PLAYERS*

Today we are going to use a technique known as role-playing. As you know, it is very difficult to know how you would feel and act if something very bad happened to you. For example, it is very difficult for a person to know what it is like and how it would feel to "flunk" out of college.

If you were told that you were academically dismissed from college because of your poor grades, how would you feel? This question is difficult to answer because it asks "if" about a thing you probably seldom thought about and which may seem remote. In a way the answer to the question is very simple. You could say you would, of course, be upset, disturbed, and so on. But more people avoid this type of question by thinking that it is not likely they would ever find themselves in such a situation. To help you think about them and to help you answer the question of what it would be like to flunk out of college, I want to use a technique which is called role-playing. Role-playing sets up a make-believe situation and makes it less remote and distant. This enables you to imagine that the event is happening right now.

*Adapted from Leon Mann, "The Effects of Emotional Role-playing on Desire to Modify Smoking Habits," Journal of Experimental Social Psychology, 1967, 3 (4), pp. 334-348.

Some of you will be the role-players and some of you will be passive observers to whom the role-players will be speaking. If we go through this make-believe situation it will give you an appreciation of what it could be like in real life. Then, by examining your thoughts and feelings while going through the role-playing session, the question of what it feels like to be academically dismissed will become much more meaningful. React realistically to the situation. Role-players, actually feel that you have "flunked out" and that you are playing yourself in this role. Listeners, listen carefully to the role-players and be quite serious.

APPENDIX G

APPENDIX G

TABLE XIX

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA INTO ANXIETY
INCREASE GROUP AND ANXIETY DECREASE GROUP ON THE
PRIOR MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	144.317	1	144.317	2.280*
Within Groups	5694.683	90	63.274	
Total	5839.000	91		

*F - 2.280 with 1 and 90 d.f. is not significant ($P > .05$).

TABLE XX

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA INTO ANXIETY
INCREASE GROUP AND ANXIETY DECREASE GROUP ON THE
POST MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	2051.289	1	2051.289	30.307*
Within Groups	6091.440	90	67.682	
Total	8142.729	91		

*F = 30.307 with 1 and 90 d.f. is significant ($P < .01$).

Appendix G (continued)

TABLE XXI

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA FOR
ANXIETY INCREASE GROUP ON PRIOR AND POST
MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	249.946	1	249.946	4.292*
Within Groups	4192.703	72	58.231	
Total	4442.649	73		

*F = 4.292 with 1 and 72 d.f. is significant ($P < .05$).

TABLE XXII

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA FOR
ANXIETY DECREASE GROUP ON PRIOR AND POST
MEASURES OF ANXIETY

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	317.899	1	317.899	4.521*
Within Groups	7593.420	108	70.309	
Total	7911.319	109		

*F = 4.521 for 1 and 108 d.f. is significant ($P < .05$).

Appendix G (continued)

TABLE XXIII

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA FOR ANXIETY
INCREASE GROUP AND ANXIETY DECREASE GROUP
ON FINAL EXAMINATION SCORES

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	11.122	1	11.122	0.068*
Within Groups	14641.346	90	162.681	
Total	14652.468	91		

*F = 0.068 for 1 and 90 d.f. is not significant ($P > .05$).

TABLE XXIV

ANALYSIS OF VARIANCE FOR TOTAL GROUPED DATA FOR ANXIETY
INCREASE GROUP AND ANXIETY DECREASE GROUP
ON NOT ANSWERED SCORES

Source of Variation	Sum of Squares	d.f.	Mean Squares	F
Between Groups	284.093	1	284.093	4.521*
Within Groups	5655.071	90	62.834	
Total	5939.164	91		

*F = 4.521 for 1 and 90 d.f. is significant ($P < .05$).